

AUTOMOBILES

TECHNOLOGY REPORTS TEST COPY

THE MOTOR AGE INDEX

THE AUTOMOBILE AUTHORITY.

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CHICAGO OCT. 24, 1901

Vol. V. No. 7

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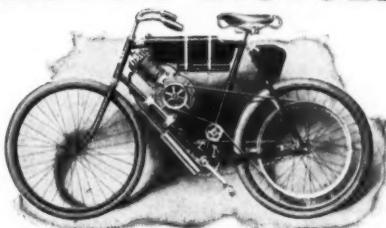
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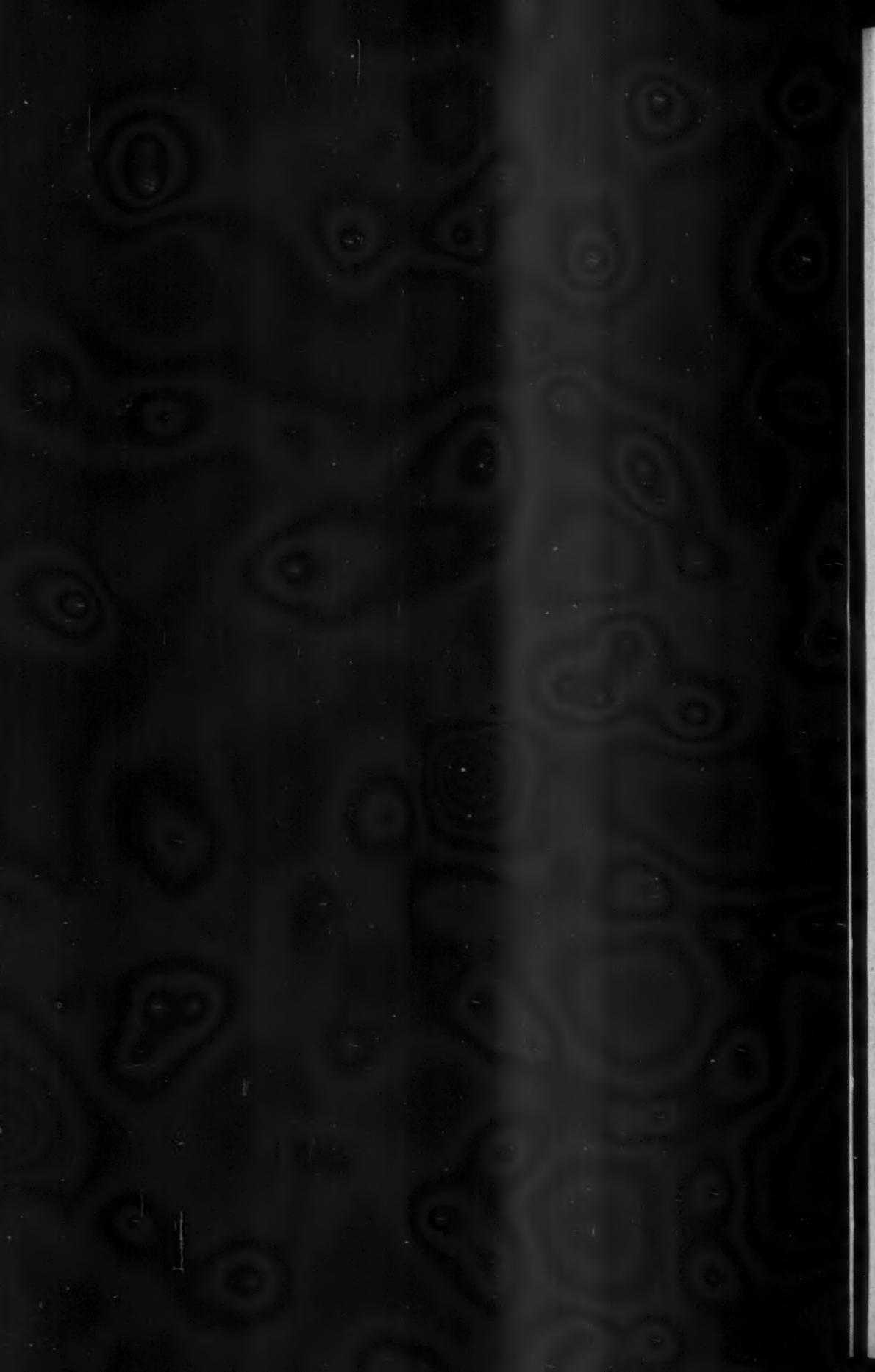


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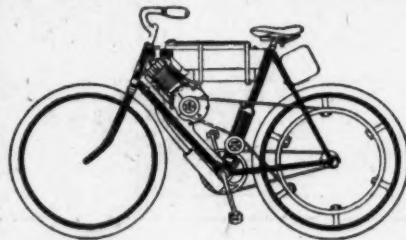
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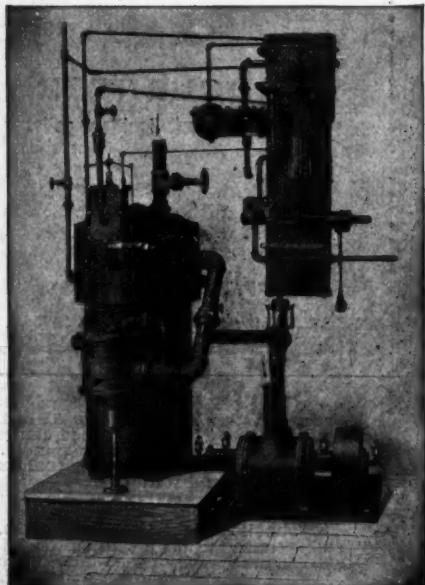


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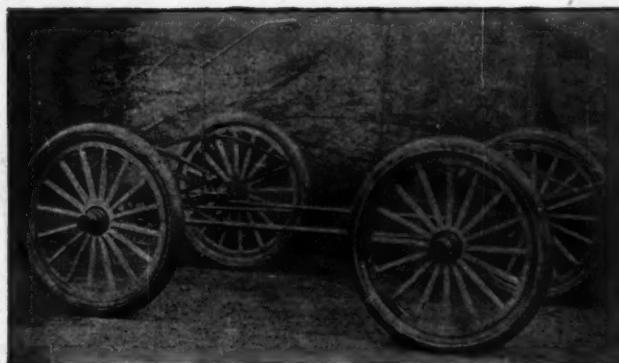
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and you ought to have it. It is made for revolving axles and is pivoted between the bearing and spring block, enabling the bearing to move free and easy with the axle always. Our catalogue tells all about it.

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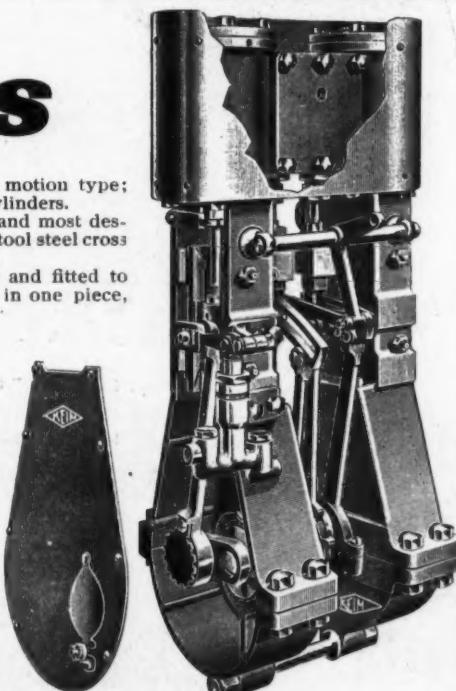
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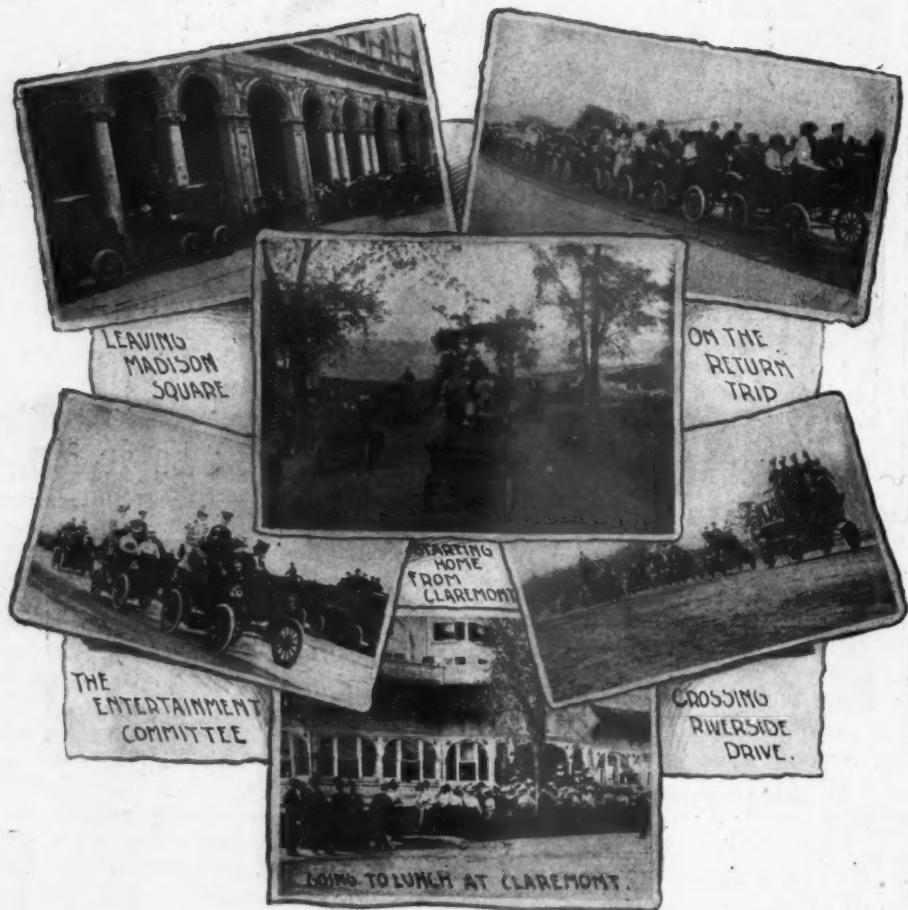
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Estimates promptly given on special forgings, sheet steel, brass or copper stamping work, machine screw products, exclusive shapes in air and gasoline tanks made for standard or special shaped bodies, castings for engine frames and cylinders, any and all shapes in springs, steel frames for interior of bodies supporting same, and the mechanism. Workmanship and material guaranteed against defects.

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Buffalo, - - - - New York





THE GUESTS OF GEORGE H. DAY.

Scenes During the Entertainment of the Delegates to the late Street Car Association's Convention by the President of the Electric Vehicle Co.

CURRENT NOTES AND COMMENTS

Charron on his return to France was interviewed by a number of newspaper men on the condition of the industry and automobileism in general in this country. "The one thing in which the Americans are lacking," he said, "and in which they need to follow us, is road racing. But they are a smart people, and will soon promote them, and if those who have attacked racing in this country continue their outcry in two years from this time the Americans will equal us and in three years—well, you must guess the rest. Just at present they have nothing very good. They have not yet had enough experience on the road."

Charron was charmed with his visit, said that everywhere he found people willing to be of service and that he was particularly smitten with the Automobile Club of America, "which," he says, "certainly knows how to do things in good style. We did some business which we had not anticipated, and the figures of \$15,000, at which we sold a vehicle, are not a bluff, as some of the papers thought." Asked as to the commercial and industrial life of New York, he said he had not been in America long enough to be a competent judge, but that if he were to start it would take a great many columns to express his admiration of American systems.

Western Auto Stage Coach

Omaha, Neb., Oct. 18.—Within a few days the first automobile stage coach ever built in the west will leave the shop at Omaha and be started on its trip to Sheridan, Wyo., where it will be used to haul passengers between that western city and Buffalo, a distance of 45 miles. This automobile was built by Frank W. Bacon, 113 South Thirty-sixth street, and was on the order of George Shelton and Norman Gaston of Sheridan. The latter have been in Omaha for some time, personally directing the construction of the vehicle, and awaiting its completion. It is propelled by a 10-horsepower gasoline engine, and has seating capacity for ten. It is covered with express-bows, same as a stage coach, and is calculated to stand the severest storms and keep the passengers from the storm and

rain. It weighs 1,600 pounds, and will run 3 to 15 miles per hour. Shelton & Gaston say they intend making the round trip from Sheridan to Buffalo, a distance of 90 miles, every day in the year.

Great Day on Coney Island

NEW YORK, Oct. 20.—Automobile racing, which has received such a boom by the recent race meets and record trials, is to have its culmination hereabout in a series of straightaway races against time over the Coney Island boulevard on Saturday afternoon, Nov. 16. To that enterprising organization, the Long Island Automobile Club, promoter of the 100-mile endurance run last spring, belongs the credit of convincing the Brooklyn park commissioners that as on one day in the year the famous ocean driveway is given over to the bicyclers for a race, the automobileists should at least have the privilege of a few hours of speeding competition. Frank Creamer, president of the Parkway Driving Club, and President Clark, of the Pleasure Driving Association, seconded the petition of the motor vehicle men. Accordingly Park Commissioner George V. Brower gave the permission asked and during the afternoon the horsemen will use the bridlepaths between the cycle paths and the main roadway.

In its arrangement of the programme the committee has recognized the mile as the standard of pure speed test and the racers will have a chance to establish new mile figures for every one of the carefully segregated classes of vehicles. In fact, the races will consist of a series of time trials and no winner whose time is slower than 1:30 will be eligible for the championship final.

The course will be a mile straightaway from a point near King's Highway toward Prospect Park, with a mile allowed for headway for a flying start, and half a mile at the end for slowing down. The boulevard is about 200 feet broad, and practically dead level. The surface will be rolled and no better chance will ever be given for placing the mile fig-

NOTES AND COMMENTS.

ures at a mark below the minute, the dream of automobiledom. That Fournier's 1:06 4-5 will be cut goes without saying, and there may be more than the big racing machines to do it; for Albert Champion will probably try with his bicycle and Kenneth Skinner with his tricycle.

The twelve events on the programme are:

1. Motor bicycles.
2. Motor tricycles.
3. Gasoline vehicles of 6 horsepower and under.
4. Gasoline vehicles over 6 horsepower and including 9 horsepower.
5. Gasoline vehicles over 9 horsepower and including 15 horsepower.
6. Gasoline vehicles over 15 horsepower and including 20 horsepower.
7. Gasoline vehicles over 20 horsepower.
8. Steam vehicles, stock.
9. Steam vehicles, special racing.
10. Electric vehicles, stock.
11. Electric vehicles, special racing.
12. Open championship, to be run in trials and a final.

The club will give cups in each class and in the championship final a special trophy, to be known as the Long Island Automobile Club cup.

It will be a great day's racing and will doubtless show 50,000 spectators the speed possibilities of the automobile. It will also establish a precedent for such sanctioned races on the boulevards of other municipalities. A big automobile parade will precede the races, starting from City Hall at 11:30 a. m., moving through Prospect Park to the course.

Entry blanks and further particulars may be obtained by addressing the race committee, Long Island Automobile Club, Brooklyn, N. Y.

To Travel 8,000 Miles

Commenting of the gradually increasing length of automobile races, the Auto Velo of Paris lately suggested that it would be a good idea to hold a test of such length as to try the machines to the utmost. Next day the paper was visited by Dr. Lehweas, of London, and Max Cudell, of Aix-la-Chapelle, Germany, who stated their willingness to take part in such an event. They said that for the last two years they had been contemplating a ride to St. Petersburg, a distance of over 8,000 miles. "When we first started the movement," said the doctor,

"the Trans-Siberian railway had not progressed very far, but now it is different. Our plan is to start from Paris and reach Berlin through northern Germany, thence to Varsovie, Moscow, over the Oural mountains, crossing the European frontier at Tcheliabinsk. We shall then take the military road via Krasnoiask and Irkoutsk to Lake Baikal. Our further trip will depend on the political situation. All being well, we shall go to Pekin, but if not to the Pacific and finish at Vladivostok." The doctor exhibited a map indicating the military roads, as prepared for the Russian army and a number of reports of English, French and German consuls, which showed the road to be passable. He said that they would use a 20-horse-power Panhard, almost an exact copy of the one used by Baron de Zuylen in the Paris-Berlin race. At the rear arrangements will be made for sleeping and cooking. The vehicle is to cost \$21,000 and to be made according to the specifications of Rene de Knyff. The travelers expect to start in March of next year. No attempt will be made to make great speed, and after reaching Moscow the average will not exceed 65 miles a day. The trip is expected to occupy about five months. The travelers will be glad of any good company which may be offered.

At Sixty Miles an Hour

A report, which must be accepted with reserve, is in circulation to the effect that Fournier and Vanderbilt recently made a run at extraordinary speed, sometimes exceeding a mile a minute. Fournier himself is said to have told this story:

The run had been made over the Merrick turnpike, and many of the miles had been traveled in less than one minute each. Some, he averred, had been covered in a shade better than 58 seconds. In the ride through the city a fair pace had been maintained, but as soon as the open country was reached he had shown Mr. Vanderbilt how fast the vehicle had traveled in the Paris to Berlin race. Mr. Vanderbilt, he said, kept the time, and afterward declared that he had never gone so fast over the ground in his life. From Manhattan the route had been by the East Twenty-third street ferry to Broadway, Brooklyn, thence along Bedford avenue and Eastern Parkway to Jamaica. On the Eastern

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Parkway the vehicle was allowed to go at a rate of about 30 miles an hour, but beyond Jamaica the rate was increased to 60 miles an hour. Through Springfield, Lynbrook, Rockville Center, Milburn, Freeport, Seaford, Amityville and Bayshore the torpedo-like racing machine dashed with a speed that the inhabitants of those places had never seen before. According to M. Fournier, speed was slackened in passing through thickly settled districts. "But then," he explained, "we made it up again when we got clear of the villages. On many long stretches we made every mile in less than a minute and I think our fastest mile was done in a little better than 58 seconds. Mr. Vanderbilt was astonished at the speed made."

The turn was made near Oakdale, the distance for the round trip being fully 100 miles, covered within three hours, including the lessening of speed in the city.

Race From Paris to Vienna

When, just after the late Paris-Berlin race there was such an outcry that it seemed impossible to carry out the program another year, the club men of Paris and Berlin about gave up the idea. Since then, however, the excitement has subsided, people have had an opportunity to see the tremendous amount of good accomplished for the industry and the presidents of the clubs of France and Austria have been in communication to such good effect that a race from Paris to Vienna is almost a settled thing in 1902.

Wanted, a New Word

The automobile press of England is trying to select a word applicable to a public storage house for motor vehicles. The one now in general use is "garage," but does not seem to be entirely satisfactory and a London motor vehicle publication, having asked for suggestions in this direction, is in receipt of a number, a few of which are dock, carhome, carpose, carrest, cardomain, cardom, motories and motostore. The publication itself seems to favor "carage."

Additions at Toledo

Toledo, O., Oct. 19.—The contract has been awarded and work will be started at once on the erection of two four-story brick buildings to be added to the American Bi-

cycle Co.'s plant. According to the plans prepared by Bacon & Huber, the dimensions of the addition to the general manufacturing building will be 40 by 156 feet, while the new foundry plant will be 50 by 130 feet. It is estimated that the total cost of the improvements will come to \$40,000. The company now employs about 400 men, and by reason of the proposed addition this number will be increased to 600.

New York-Philadelphia Record

Referring to the late run of Mr. Smith and his companions from New York to Philadelphia, during which, it was supposed, they made a record between those points, A. B. Cumner, of Philadelphia, writes:

"I beg to call your attention to the fact that S. L. Clayton and the writer have frequently negotiated the entire distance between Philadelphia and New York City, a distance of 102 miles, in less than 4½ hours. An analysis of the two times gives a much faster average mile to us, and yet we make no claim for record. It is our intention to shortly make a special run from here to New York and endeavor to establish a record time, using for same a standard 9-horsepower Gasmobile. I may say that our above mentioned trips were made in the same vehicle, namely, Gasmobile."

Special Committee on Speed

NEW YORK, Oct. 19.—The board of supervisors of Nassau county held a hearing and conference yesterday at Mineola to consider some complaints made of excessive automobile speeding on the highways in violation of the highway restriction of 15 miles an hour. This Long Island county embraces the fashionable residential district, where millionaires have their country seats, and includes the towns of Mineola, Garden City, Hempstead, Cedarhurst, Westbury, Lawrence, Roselyn and Rockaway. Automobiling is the prevalent fad and the faddists include about all the multi-millionaires of the county.

The chief complainants were Benjamin D. Hicks, of Westbury, and David Provost, of Great Neck. On behalf of the Automobile Club of America, there were present Sidney Dillon Ripley, one of the governors, and S. M. Butler, secretary.

Senator W. W. Cocks, author of the

NOTES AND COMMENTS.

amended highway law of last winter, was on hand and participated in the conference. He said that he was cognizant of violations of the speed ordinance, which in accordance with the state law had been enacted by the supervisors. He said, however, that the violators of it were greatly in the minority and that the large majority of the automobile users did their best to keep within speed restrictions themselves and urge their fellow chauffeurs to do so also. The senator thought a \$25 fine inadequate to stop excessive speeding. If violations were persisted in he hinted at drastic legislation.

Chairman Cox, of the board, said his body had done all it could do in passing the ordinance and could not be expected to attend to its enforcement. Under the law as the supervisors interpreted it, excessive speeding was not a misdemeanor and merely rendered the offender liable to a civil suit in case of damages through frightened horses or a collision. Constables might, of course, be appointed to patrol the roads.

Sidney Dillon Ripley said he had run his machine in the country for 2 years and in that time had never frightened a horse or killed a chicken. His club's attitude might be inferred from its having sent Secretary Butler to attend the hearing.

Secretary Butler said the club stood committed as strongly against speeding on the highways in violation of the law and had so informed its members. They had been furnished with a copy of the law, annotated and explaining the rights and restrictions of automobiles under the law. Every effort had been made to impress this speed restriction upon them.

Mr. Provost, one of the complainants, proposed a system of deputy constables.

The chairman of the board finally appointed the following special conference committee: Senator Cocks, Davis Provost, Sidney Dillon Ripley and S. M. Butler.

Another Outcry About Speed

The municipal council, of New York, is not satisfied that the laws relative to automobiles are properly enforced. At a meeting held last week the president offered, and the members adopted, the following resolutions:

Whereas, The numerous casualties that have occurred upon the streets of this city recently, resulting in the maiming and

death of passengers using the streets and avenues and roadways in the parks, and particularly the recent accident resulting in the death of one of our most faithful policemen, make the use of the streets absolutely unsafe for foot passengers, as well as those in vehicles drawn by horses, who are lawfully entitled to use the public highways, and be protected in such use; and,

Whereas, Although the laws of the state as well as the ordinances of the city and rules, regulations and ordinances of the department of parks, are intended to protect foot passengers and those in vehicles drawn by horses in their lawful use of the streets, avenues and roadways of the parks, and if adequately enforced would afford such protection;

Now, therefore, be it resolved that the police department and the department of parks be and the said departments hereby are requested to enforce with greater vigilance the laws, ordinances, rules and regulations relating to the use of the streets, avenues and roadways of the parks by automobiles and all other motor vehicles to the end that foot passengers upon the streets, avenues and roadways of the parks, as well as those in vehicles drawn by horses may be protected and made secure from accident and death on the streets and avenues and roadways of the parks of this city.

Proceedings of National Association

The secretary reports the following proceedings at meetings of the executive committee of the National Association of Automobile Manufacturers on October 10 and 14:

It was reported that the Automobile Club of America would probably favor consolidation with the association hereafter in the holding of the New York show, and a suggestion for the appointment of a committee on the subject was properly acted upon.

The arrangements for the participation of the association in the Chicago show were approved and the Chicago representatives of the Electric vehicle, De Dion-Bouton and Locomobile companies, G. H. Atkin, L. M. Grant and C. H. Tucker, respectively, were designated as an advisory committee to represent the association in regard to that show.

The following new members were elected:
Active—George N. Pierce Co., Buffalo; Fos-

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NOTES AND COMMENTS.

ter Automobile Mfg. Co., Rochester; Searchmont Motor Co., Philadelphia, and Brecht Automobile Co., St. Louis. Associate—Garvin Machine Co., New York; American Wood Rim Co., Bradford, Pa.; Peter Forg, Somerville, Mass.; General Electric Co., Boston; Standard Spoke & Nipple Co., Torrington, Conn.; Whitman & Barnes, Mfg. Co., Akron, O.; Locke Regulator Co., Salem, Mass.; Kelly Handle Bar Co., Cleveland; Janney, Steinmetz & Co., Philadelphia; Dayton Motor Vehicle Co., Dayton, O.

Thursday night, Nov. 7, at 8:30, in the assembly room of the Madison Square Garden, was designated as the time and place of the annual meeting for the election of executive committeemen for the 3 years' term, succeeding the present one-year term committeemen, viz.: Samuel T. Davis, Jr., A. S. Winslow, Dane E. Rianhard, Charles E. Duryea, C. B. Frayer. A dinner will be given in connection with the annual meeting. All members exhibiting at the Madison Square Garden show will display a membership sign.

The question of undervaluation of for-

ign made machines was taken up, and will be carefully watched and attended to hereafter.

As the French show debarred foreign exhibitors, and as it had come to the knowledge of the association that the Automobile Club of America proposed making a free exhibit of foreign made vehicles, the Association formally protested against such action, and recommended instead thereof that such space be utilized for an historical exhibit of foreign made vehicles, the manufacture, and any other machines which would be of special interest, as showing the development of the automobile industry in this country.

It was decided to hold the annual convention for the discussion of trade topics as provided for in the by-laws, in the garden on the forenoons of Tuesday and Wednesday, Nov. 5 and 6, 10 to 12 o'clock. Among the topics selected for discussion are: The national association, protective tariff and undervaluations, legislation, transportation, commercial gasoline, wheels, steel tubing, tires, races, good roads, prices and dis-

DEMONSTRATION AT DETROIT



These pictures represent feats performed by the operators of Olds vehicles at the late Detroit meeting, and are self-explanatory. They were designed, of

course, to please the spectators and demonstrate the splendid control of the machines, in both of which they were eminently successful.

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counts. Among the speakers will be: Messrs. Samuel T. Davis, Jr., Schwarzkopf, of Automobile Topics; Goodman of Motor World; W. W. Niles, George F. Chamberlin, Edward W. Adams, John Brisben Walker, Charles E. Duryea, E. P. Wells, Albert T. Otto, Kirk Brown, Alexander Winton, T. C. Martin of Electrical World; W. P. Stevens of Motor Review, and representatives of the Goodrich, Diamond and Hartford tire companies, Standard Oil Co., and Shelby Tubing Co.

Baron De Zuylen Coming

Baron de Zuylen, president of the Automobile Club of France, contributes the leading article to the first issue of the new Parisian automobile journal, *La Locomotion*. He expresses the opinion that nothing but the racing promoted by the club has been responsible for the extraordinary enthusiasm over automobiles in France. He condemns the attacks made on the sport by a section of the press, but marks with satisfaction that the result of the Paris-Berlin race, which brought so many orders that the makers are unable to fill them, has so far convinced them of the results of the sport that they have moderated their outcry. He remarks that he has been told by friends that New York is the only city in the world that has more automobiles than Paris, and that he will shortly visit this country for the purpose of investigating American machines, especially electrics.

Cockley an Automobile Maker

Colonel D. L. Cockley will be remembered by many as the organizer and first president of the Shelby Tube Co., that mammoth institution which now controls the tube markets of the country. It was started in a modest way, for people believed in those days that nobody could make seamless cold-drawn tubing outside of Birmingham, England, and the Shelby company had before it the difficult task of breaking down that deep-rooted impression.

The colonel retired from the company some years later, having sold a great part of his holdings, and since that time has been heard of but little. But he has come to the surface again and is to become as active in a new business as he was in the old. In short, he has bought a large in-

terest in and has become president of the Beardsley & Hubbs Mfg. Co., formerly of Mansfield, O., but whose factory is now being removed to Shelby. The move is, of course, due to Colonel Cockley, who secured a modern, well-equipped factory. In this new location the company will push with vigor the manufacture of automobiles, commenced in a comparatively small way at the old plant. Further details of the machines will be found in the last issue of *MOTOR AGE* in the present month. The officers of the company are now as follows: D. S. Cockley, president; E. L. Sanderson, secretary; Volney S. Beardsley, treasurer and manager.

Those who remember Shelby in the days of 4 or 5 years ago will be surprised to learn that the town now has 5 miles of asphalt streets. The company regards it as an ideal town for the manufacture and demonstration of its machines.

Climbing Corey Hill

There was a time when every cyclist in the United States knew all about Corey Hill. It is in Boston. Whenever any one felt himself capable of beating creation as a hill climber he tackled Corey. He generally went away with a far greater opinion of the men who had done the trick,—and by the way, there were few of them. But in these degenerate days of the cycle, no one thinks of exerting himself sufficiently to make a road record or anything else, except for money. And there is no money in climbing Corey Hill. But the automobilists have tackled the feat. To them it is no great trick to climb it, but to get there in the best time is the aim of all of them. Some time ago Harold Brown went up it in an Autocar of 6 horsepower in 2:03 1-5. Last week several men tried it and in the end a Toledo steam carriage seems to have taken the palm.

E. C. Byam, in a De Dion motorette, made the run in 2m., 32s. Skinner took Byam's carriage and made the same run in 2m., 36s. The conditions were the same as for Byam, except that with Skinner at the levers the carriage was carrying about 30 pounds more weight.

While the trial was going on, A. E. Morrison came up in a Toledo steam carriage with E. H. Shattuck, and after a brief stop, he also made several trials. The first was

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timed by Shattuck at 2m., 4s. The next trial was made in 2m., 10s. On the third trial, however, the steamer ran up the hill in 1m., 47s., as timed by a Transcript reporter. The steam gauge stood at a little over 250 pounds when he started the last climb, and was a little inside of 148 pounds when he finished.

Utica Automobile Club Formed

The Automobile Club of Utica was formed by sixteen Uticans at a meeting held last week at the office of the Remington Automobile and Motor Co. These officers were elected: President, C. S. Mott; vice-president, A. L. Seaton; treasurer, Samuel R. Campbell, 2d; secretary, James S. Holmes, Jr.; captain, W. H. Birdsall. A committee was appointed to draft a constitution and by-laws and another committee will report at a meeting to be held this week.

The Mobile's Regulator

So well satisfied is the Mobile company with a water regulator on which it has lately purchased patents that it will do away with water columns on all of its heavy vehicles. "Don't laugh," said Randolph Walker while telling about it on Monday. "It is a really good thing this time. We have tested it over 7,000 miles and have done our best to cause failure. It operates so successfully that we are prepared to guarantee it." Accompanying Mr. Walker on a trip to Chicago was one of the gentlemen who are to operate a stage line at San Jose, Cal. The company will start a dozen vehicles, all of which are to be shipped shortly, but expects to increase the number considerably before long. Mr. Walker expressed the opinion that some day the stage line department will be the most important branch of the company's business.

About Sanctioned Shows

The following notice has been issued to members of the National Association of Automobile Manufacturers by the secretary:

Please to carefully note and remember that with the exception of the two annual shows, the one in Chicago and the other in New York, which two automobile shows will be held hereafter under the auspices

of the association and the two clubs of the respective cities, you are not to take space or commit yourselves to any shows whatsoever without due and formal notice of the sanction and approval of the association first had and received. In other words, if at any time any show other than the two annual shows as above mentioned should receive the indorsement of the executive committee, you will be duly and promptly notified from this office. As to our own two stated shows, of course, no such notice will be required.

To Manufacture at Akron

The Akron Motor Carriage Co., formed a year or more ago, bought out a cycle factory and started to make automobiles. There were good people in the concern, but not far enough in, and after awhile it gave up the business and sold out to the Woodruff Automobile Co. That company has just finished a vehicle and placed it on exhibition. Its work has been merely preliminary to greater things, and it is reported that, the experimental work having been finished, the company will be enlarged, and that the capital will be about \$50,000.

New Incorporations and Enterprises

It is reported that H. W. Pease, C. L. Landgreaver and others contemplate organizing a company to manufacture automobiles at Goshen, Ind.

Standard Motor Vehicle Company, Pierre, S. D.; capital, \$500,000; incorporators, R. M. Wiles, J. C. Edgecombe, T. P. Estes.

After 4 years of experiment in a small shop at 848 Market street, Milwaukee, the Kunz Automobile Co. has commenced the erection of a frame building for a factory, in which, it is said, fifty men will be employed and automobiles will be made for spring delivery.

The Empire Motor Carriage Co., of New York city; capital, \$250,000.

Automobile Storage and Repair Co., of New York city; capital, \$50,000; directors, J. A. Scott and J. E. Donohue, of New York city, and A. C. Bell, of Brooklyn.

Royal Motor Works, Worcester, Mass. Capital stock \$10,000, to develop, manufacture and sell vehicles of all kinds and appliances for propelling the same. Promot-

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ers: Charles A. Persons, Cornelius M. Garbutt, William Garbutt, Worcester; F. L. Dutton, E. F. Whittum, M. B. Ward, Augusta, Me., in which state the company is incorporated. The company will make the Hafelfinger motor bicycle.

Newcastle, Ind., has a new factory in which machinery is being placed to make the Ideal automobile. T. J. Burk is president of the company; H. H. Hemington, vice-president; W. F. Byrket, treasurer, and Frank Burk, secretary.

Stanley & Ferguson, liverymen at Wichita, Kas., contemplate the purchase of a vehicle to carry four persons, early in the coming year.

Standard Motor Vehicle Co., Pierre, S. D.; capital, \$500,000; incorporators, R. M. Wiles, J. C. Edgecombe, T. P. Estes.

An automobile line is to be established in Homestead, N. J. A company, of which T. Lea Hammett is the head, is being organized to run a line from Homestead through Munhall to Whittaker, in Mifflin township. The road to the latter place is steep, and contracts for machines have been placed, contingent upon demonstration that they climb satisfactorily.

At the Remington Works

There is something doing at the Remington works in Utica. A. R. Stott, lately of Melbourne, Australia, was in town, and after looking over the machines and the works where they are made, left an order for five automobiles to be shipped to Australia.

Within a short time Manager Holmes has taken an order from Kunhardt & Co. for twelve automobiles to be shipped to Cape Town, South Africa. Both these orders are for the vehicle known as style C, with 6-horsepower motors.

A contract was closed the other day with J. A. Wells, of Toronto, whereby he becomes the manufacturer's agent in his section for the Remington motors for marine purposes, agreeing to take twenty within a year. These motors will be placed in launches, for which they are admirably adapted.

Look Out for Storms

Some one has raised the question whether an automobile is safe in a thunderstorm. It is the same old question that came up a year ago in connection with the bicycle. A

paper endeavors to answer the question in this fashion: "Although an autocar contains a comparatively large mass of metal, it could not take, and would not invite, the discharge of a cloud such as would be dangerous. It would invite such a discharge, and would probably be wrecked by the discharge, if it formed part of the discharge path to a conducting mass below. Such a conducting mass would be the wet ground of a large level field, under which a bed of clay existed, so that the wet could not get away. A path like this might also be formed in certain special cases on a wet road, but they would be rare. For safety, then, in a thunderstorm, the autocar should keep right out in the open and on the hardest bit of road that can be found in the neighborhood. An autocar or a bicycle under a tree forms part of the path to the conductor on or in the earth's crust, and accommodates a share of the discharge, with usually disastrous results. It assists to invite the discharge, and has to take more than it can accommodate without damage."

In the Postal Service

Just one concern was found with sufficient confidence to file the heavy bond demanded by the government in connection with the carriage of mail matter by automobiles, in Minneapolis. Last week, after a vast amount of telegraphing, a contract was made which gives the Republic Motor Vehicle Co. \$17,313 for carrying the mails between the postoffice, postal stations and substations and collections from some of the letter boxes in the business section of the city from Jan. 1, 1902, to June 30, 1903.

An unfounded report is in circulation to the effect that the National Sewing Machine Co., of Belvidere, Ill., will commence to manufacture automobiles on a large scale in November. Frank Eldredge is reported to have said that the company would make gasoline machines in such large quantities that it would be possible to sell them at \$750. All of which is moonshine. If the National company makes automobiles for the public it will not be this season. When it concludes to do so reliable information concerning the matter will be found in the MOTOR AGE.

While it is not creditable to automobilists that too great a number of them dis-

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regard the rights of other persons on the highways, one can hardly repress a feeling of satisfaction at times at the turn of events since the road hog forced the unoffending cyclist into the ditch. It is, indeed, a case of the biter bit.

A report comes from New York that a manufacturer has undertaken, for \$20,000, to build a machine to make 70 miles an hour. This, no doubt, refers to the vehicle to be made by the Long Distance company, briefly described in last week's *MOTOR AGE*.

An invitation was extended to Sir Thomas Lipton by the Chicago club to attend the races which it was intended to give at Washington Park. Sir Thomas wired in reply that owing to his inability to arrive in time he was reluctantly obliged to decline.

In Dady's carriage factory, at Wauke-

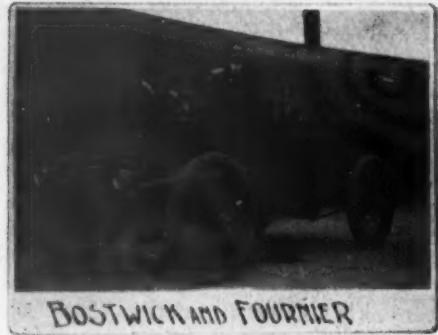
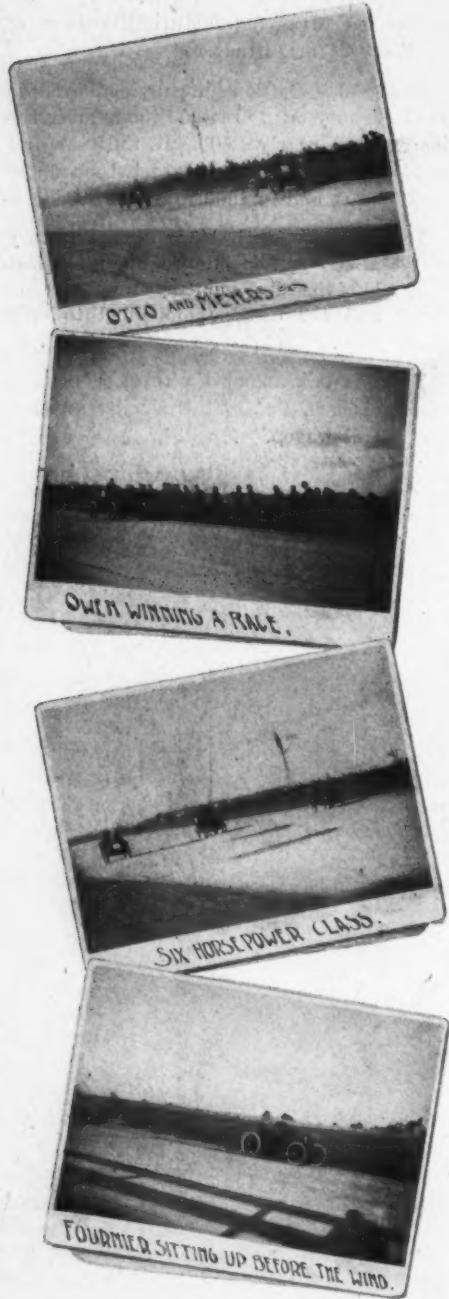
gan, Ill., is being constructed an automobile light delivery rig for the Porter Battery Co., which, if wholly successful, may be the initial one of a manufacturing business of considerable magnitude.

In 1885 the DeDion company employed, in Paris, twenty men. In 1900 the number has increased to nearly 1,500. In the year first mentioned the business transacted amounted to \$170,200, and in 1900 to \$2,200,000.

There was a small blaze at the factory of the Foster Automobile Co. one night last week, but the fire company was soon on hand, and the damage amounted to only about \$100.

There is talk among the town councillors of Harrisburg, Pa., of introducing an electric patrol wagon.





BOSTWICK AND FOURNIER

THE RACES AT

What was undoubtedly the most successful automobile race meet ever held in this country, and one that has done more to popularize the sport in the east, opened on the Narragansett Park track, Providence, R. I., last Thursday. The meeting was conducted by the Automobile Club of Providence, and the members of that organization spared no effort or expense to make the event historical. They had planned and worked for several months to provide an interesting series of events, and had anticipated that the people of their city would respond liberally, but they had no idea that so great a demonstration of popular interest would result. They confidently expected that from 3,000 to 4,000 persons might attend the races, but to provide for emergencies had 5,000 tickets of admission printed. These were all sold before the first race started, and after that 3,000 people crowded through the turnstile, paying cash to the gate keepers, satisfied to get in the grounds and take their chances of securing a place to witness the events.

Unfortunately soon after the first race the weather, which all the morning had given hope of a fine afternoon, began to look dubious, and just when everybody had settled down for a good afternoon's sport the rain started and put an end to the contests. With the liberality which characterized all the club's doings in everything connected with the meeting, the announcement was made that owing to the condition of the track the rest of the races would have to be postponed until the next afternoon, but that the track would be



RECEIVING INSTRUCTIONS



PROVIDENCE

thrown open to the public and no admission charged.

THE LEADERS OF SOCIETY.

Before the rain started and while the first races were being held the appearance of the track reminded one of the big horse races which are held around New York. Every box and seat in the grand stand was filled with a well dressed, prosperous-looking crowd. Society of Boston, New York and Providence and the big New England cities was well represented. The infield for nearly the whole length of the stretch was lined with buggies, four-in-hands, and automobiles, while the rails on both sides of the track were two and three deep with interested spectators. Governor Gregory of Rhode Island and his brilliantly attired staff occupied boxes and many members of the prominent automobile clubs were in evidence. The trade, too, was well represented. Evidence of the growing interest in automobile racing was the fact that the principal New York dailies sent their star men to cover the event. W. K. Vanderbilt, Foxhall Keene, A. C. Boswick and Henri Fournier had entered, but only the two latter put in an appearance, Mr. Vanderbilt sending word that his machine was not running to suit him. With the true sporting spirit A. C. Boswick, knowing that any time he could make would be beaten by Fournier, kept his word and appeared on the track and made an effort to reduce his own figures.

ELECTRICS SHOULD NOT RACE.

Promptly at 2 o'clock, the time set for the first event, a 5-mile race for electrics

AUTOMOBILE RACING.

was started. C. I. Campbell, B. W. Barrows, Albert T. Russell, H. H. Rice and F. Mossberg had entered, but only Campbell, Russell and Rice started. The first named rode a Columbia runabout, and the others Waverlies. That the type of vehicle is not suitable for racing was apparent from the start. They made no noise, gliding around the track with a regularity of speed that failed to arouse any interest after the first mile. Soon after the start Rice crawled about 30 feet in front of Russell and the two kept the same distance apart right through the 5 miles, Campbell dropping behind and withdrawing after 2 miles. The time for the 5 miles was 14:23 $\frac{1}{4}$. The first mile was the slowest—3:01—probably owing to the operators trying some jockeying, and the fastest was the fourth, in 2:36 $\frac{1}{4}$.

STEAM PLUS MUSCLE.

The next race pleased the crowd and aroused considerable enthusiasm. It was a 5-mile event for steam vehicles. Among those lined up for the start was George C. Cannon, a Harvard student, in a wagon of his own assembling. It had a racing Locomobile body, a Mobile boiler and a burner of his own construction. At the back of the seat was a stack about two feet high. He was accompanied by R. Fosdick, another Harvard boy; John Shepherd, Locomobile; H. G. Martin, Locomobile; Arthur Lee, Toledo; E. Blakeley, Locomobile, and H. H. Hills, Milwaukee. This race, like all the others, was started from about 100 yards from the tape, to enable the operators to get up speed for a flying start. The wagons got away after one false start and with clouds of steam gushing from their exhausts tore around the track amid the plaudits of the crowd. At the first mile Blakeley led by an eighth of a mile, with Cannon next, followed by Shepherd. Cannon's companion was working like a fiend pumping water and air.

TWO MILES ON ENTHUSIASM.

Blakesley, Martin and Lee were also pumping, but Shepherd and his companion were depending on the regular pump to carry them along. Hills, Blakeley and Lee withdrew.

At the third mile the furious pumping on Cannon's machine drew it ahead and it led by one mile, when lead it held to the finish, Shepherd coming in second and Mar-

tin, with his burner flooded and flames shooting from the stack, third. Cannon, in his enthusiasm, went 7 miles before he realized the race was over and then he had to push his machine in with a burnt out boiler. Shepherd, who is a well known Providence millionaire, afterwards said he went into the race determined to keep a regular speed and depending on the other fellows falling by the wayside. The wisdom of his judgment was shown by landing in second place with his machine in as good condition as at the start. The time for the 5 miles was 9:40 $\frac{1}{4}$.

BOSWICK LOWERS ONE RECORD.

A. C. Boswick next appeared and attempted to lower his own records from 7 to 15 miles. His machine was stripped of all unnecessary woodwork. On his appearance he was met with hearty applause. He rode one mile to get up speed. It was announced at the completion of his eighth mile that he had beaten his own record by five-sixths of a second and the time was given as 11:06 $\frac{1}{4}$. On the tenth mile Boswick was obliged to stop for the same reason that put an end to his recent Empire track attempt, the overheating of one of the two cylinders which drive his Winton. His time was as follows:

	Time of mile.	Total time.
1 mile	1:20 $\frac{1}{4}$	1:20 $\frac{1}{4}$
2 miles	1:20 $\frac{1}{4}$	2:40 $\frac{1}{4}$
3 miles	1:25	4:05 $\frac{1}{4}$
4 miles	1:30 $\frac{1}{2}$	5:36 $\frac{1}{4}$
5 miles	1:28 $\frac{1}{4}$	7:04 $\frac{1}{2}$
6 miles	1:23	8:27 $\frac{1}{2}$
7 miles	1:23 $\frac{1}{4}$	9:50 $\frac{1}{2}$
8 miles	1:15 $\frac{1}{4}$	11:06 $\frac{1}{4}$
9 miles	1:26 $\frac{1}{2}$	12:33
10 miles	1:30 $\frac{1}{4}$	14:09 $\frac{1}{4}$

FOURNIER THE GREAT ATTRACTION.

Before Mr. Boswick left the track the rain had begun falling. Fournier next made his appearance with his powerful Mors and was received with cheers, everybody in the grand stand leaving their seats to get a good view of the famous French chauffeur. As is usual with him, he came to the judges' stand at full speed and stopped his machine within almost its own length. After explaining that he would go one mile to get up speed, he dashed away and a wave of wonder passed over the spectators as they saw the speed of the huge machine. As the track was getting wetter and wetter and little pools of water were forming at the rail on the curves,

AUTOMOBILE RACING.

Fournier took them wide and passed down the stretch within 2 feet of the outside rail, making the rail birds jump back in alarm as he shot by them with the ominous internal burring noise which his machine makes.

Murmurs of astonishment passed over the throng at the sight of the rushing monster and several instances were seen of the high nervous tension of those watching it. A MOTOR AGE man saw two women hanging on with both hands to a little man with side whiskers, who looked, himself, as if he would like to be in some place where there was no possibility of the machine reaching him.

RAIN ENDS THE SPORT.

After going 3 miles Fournier saw that with the rain increasing he took desperate chances on the track, stopped and explained that it would be impossible to continue as his driving wheels were slipping. His performance was loudly cheered and as he left the track the rain came down in sheets. The announcement of the postponement was then made.

In the evening the club entertained the visitors and the press at an informal dinner at the Narragansett Hotel. It was a merry, enjoyable gathering, and when it came to the speaking nobody could find praise enough of the club's enterprise. Dr. J. A. Chase, president of the club, acted as toastmaster. Among those who spoke of the effect of the meet on the sport and the trade were Malcolm L. Ford, M. Fournier, John Shepherd, Jr., William Ingliss, James McNaughton, R. Lincoln Lippitt, Frederick C. Fletcher, Percy Owen, Fred E. Perkins, Arthur Bond, Arthur H. Moore and Louis R. Smith, of MOTOR AGE.

FRIDAY'S RACING.

Friday opened clear and cold, and those who were out at the track during the morning realized that the high northeast wind which prevailed would prevent records being broken. The gate being free the crowd began arriving early, but at no time during the afternoon was the attendance as big as the previous day. Probably 5,000 persons were present when the first event was started. The big drop in the temperature no doubt had considerable to do with this falling off.

The first heat of the 5-mile race for gasoline vehicles of 12 horsepower and under

was the first event. There were seven entries, but those who showed up at the start were Howard Burdick and Percy Owen, Wintons; Alexander Fisher, W. P. Norton, Gasmobiles. Owen jumped to the front at the start and was not caught. After 2 miles the machine entered by Fisher had trouble with the ignition and withdrew. At 3 miles Owen was a mile ahead of Norton, who was a half-mile ahead of Burdick. The machines finished in this order. Owen's time was 9:34.

SKINNER'S PICNIC.

The next race was for gasoline carriages under 6 horsepower, T. Shaw Sefe, Kenneth Skinner and Ralph Lewis starting. They all rode De Dion motorettes, Sefe and Lewis having stripped their machines of all unnecessary fittings and cut off their mufflers. Skinner, however, rode with his muffler and did as he pleased with his competitors. He led at the start and increased his lead to three-quarters of a mile at the finish. Sefe was second and Lewis third, the time of the winner being 12:59½.

The second heat of the 12 horsepower and under, 5 miles, was the next event. Those lined up were the Gasmobile of Rudolph Meyers, a Packard driven by C. Prescott Knight, John Shepherd in a Gasmobile and a Gasmobile entered by Albert T. Otto. With these machines exhausting in the open air and stripped of all superfluous fittings, it was seen that a good race was in prospect and a wave of expectancy passed over the crowd. There had been some talk of protesting the Packard, as it was claimed to be a 15-horsepower machine. As it was sold to Mr. Knight for 12 horsepower, and there was no evidence to the contrary, nothing was done. As a matter of fact the machine had been making good time during trial spins in the morning, but did not go as well during the race. Knight had just purchased the machine.

RACE BETWEEN GASMOBILES.

After going about half a mile Shepherd's machine balked and he withdrew. The other three finished the first mile bunched and the crowd got on its feet and yelled. Meyers was ahead, followed by the Otto machine, and the Packard was in the rear. The race between the two Gasmobiles was exciting and kept the crowd in a ferment. Finally Otto passed Meyers and the applause was long and loud. Knight was

AUTOMOBILE RACING.

hopelessly in the rear. Otto continued to gain and at the finish was about 40 yards in front. The time was 9:08 $\frac{1}{2}$.

TRICYCLES MAKE BEST TIME.

The next event was announced for the tricycle class, but an Orient motor bicycle ridden by Eugene Scott took part. The other machines were a racing tricycle with De Dion motor, owned by Kenneth A. Skinner; another De Dion tricycle ridden by Peter J. Berlo, and an imported tricycle ridden by C. J. Henshaw. From the start it was apparent that Skinner's machine outclassed the others. Berlo hung on to him for a time, but at no time was he dangerous. The motor bicycle was too low powered for such company. Skinner's time was 6:54 $\frac{1}{2}$, the best time made during the meeting.

FOURNIER'S SECOND ATTEMPT.

Amid enthusiastic applause Fournier started on his second attempt to lower his record. The wind had not abated and there was little chance of him succeeding, but the crowd took more interest in his attempt than anything else during the afternoon. He rode with his accustomed daring and coming down the homestretch showed his skill at his work by sitting up to take advantage of the wind which followed him. He stopped at 9 miles, as a leak had developed in his water tank and he was afraid of overheating his engines. His fastest mile was his first, covered in 1:07 $\frac{1}{2}$. His next fastest miles were his second, third, fourth and fifth, which were traveled in 1:09, 1:09, 1:09 $\frac{1}{2}$ and 1:09 $\frac{1}{2}$ respectively. The time for 5 miles was 5:44, as against his own record of 5:38 2-5. Seven miles were covered in 8:08 $\frac{1}{2}$, 8 miles in 9:22 $\frac{1}{2}$ and 9 miles in 10:43 $\frac{1}{2}$.

THEN THE CROWD LEFT.

When Fournier left the track more than half of the crowd left for home and did not wait to see the last two events. The final heat of the 12-horsepower gasoline machines went to Percy Owen, who rode the 5 miles without serious opposition in 8:51.

The final race, a sweepstakes, 10 miles, for the winners of all the previous events, showed the folly of permitting the racing tricycle to compete with its more heavily equipped competitors. Skinner pulled away at the start and at a mile led the other vehicles by a quarter of a mile. At 5 miles

he was 1 $\frac{1}{2}$ miles in front and won as he pleased. Up to 7 miles the race between Cannon's steamer and Owen's Winton for second place was very interesting and the crowd followed them with yells and advice as to what to do. It was more a matter of muscle against machinery than anything else, as Fosdick, who was riding with Cannon, was working like a Trojan to hold sufficient water and air. At 8 miles he began to tire and the machine dropped behind, to the regret of the crowd, who had watched the plucky efforts with encouraging cheers every time the machine passed the grandstand. The electric did not start in this race.

The officers of the Automobile Club of Providence are: Dr. Julian A. Chase, president; Fred E. Perkins, secretary, and R. Lincoln Lippitt, treasurer. The judges were Dr. Chase, Melville Bull, William Gammell and Richard B. Comstock. The stewards were Fred E. Perkins, R. Lincoln Lippitt, John Shepherd, Jr., and Frederick Fletcher.

Notes on the Races

One of the most interesting sights of the race meeting and one which very few witnessed, was the rushing of the curves by Fournier. A MOTOR AGE man, who stood at the upper turn while the Frenchman was making his attempt to lower the record, saw the car making the turn with the body at an angle of 30 degrees with the rail. It seemed as if the rear part of the machine was possessed of some demon which was determined to tear the vehicle over to the outside rail and that the steering wheels, possessing greater strength, pulled them back. This continued all around the turn, with the front wheels holding the machine back, as if they were running on rails. Fournier afterward said to the writer that when he struck the curves the working of the differential gear made him feel as if all the brakes of the wagon were on.

A. C. Bostwick in speaking of the value of the high powered racing machine said to a MOTOR AGE representative that he thought there would be a demand for the vehicles for some time to come. "There are many men like myself," he said, "who want a machine that will climb any hill and carry a number of passengers, and when a contest is entered can detach the tonneau and have

AUTOMOBILE RACING.

a racing car which will travel as fast as one can desire."

In practically every race in which Skinner has taken part with his racing tricycle there has been talk of protesting it. The machine, which is fitted with a 4½-horsepower air-cooled De Dion motor, is practically in a different class from motor wagons. It offers no wind resistance and in every race it has run away from its more bulky rivals.

Frederick E. Perkins, the owner of the track, said that next year he expects to put up a good-sized purse for a series of automobile races and that he had no doubt he could get some of the big European racing cars to enter. He will bank the track and has hopes of bringing about one of the biggest international events of the year.

Too much praise cannot be given to the officers of the club for their energetic work in connection with the races. When the meeting was first contemplated they went down in their pockets and advanced large sums of money without any expectation of being reimbursed. They wanted to do credit to their organization, and both labor and capital were expended with true sportsmanship, and the success of their efforts testifies the result.

The club is comfortably located in rooms at the Crown Hotel, a new hostelry which has been fitted with true metropolitan style. The organization has a suite of rooms, with restaurant and library, and the race will undoubtedly prove a big boon to the membership.

H. G. Martin, who has the biggest auto-

mobile establishment in Providence, was at the track both days and was one of the indefatigable workers. Martin said he expects the races will prove a big boon to the trade throughout the state, as many people who had contemplated purchasing vehicles after seeing the races became enthusiastic and decided to join the increasing army of chauffeurs.

The time taken at the track was announced in quarters, the machine for registering time not being equipped with fifth figures.

The time made in the second heat of the 12-horsepower and under class was the fastest ever made for the distance by a 9-horsepower machine. The heat was won by Albert T. Otto in 9:08½ in a Gasmobile.

Fournier's New Record

Fournier's time for the seventh, eighth and nine miles establishes new records, supplanting those made by A. C. Bostwick in his fast trial at Empire track Oct. 3 last. The old and new figures are here given:

Miles.	Bostwick, Fournier, Empire Providence.	Track
7	8:08½	8:56 1-5
8	9:22½	10:12 2-5
9	10:43½	11:28 1-5

Bostwick still holds the following track records: Ten miles, 11:28 1-5; 11 miles, 14:02 4-5; 12 miles, 15:21; 13 miles, 16:38 4-5. Fournier holds all other records for from 14 miles to 25. See MOTOR AGE of Oct. 10.



SUPERHEATED STEAM

Of late much attention has been given to the use of superheated steam in engines applicable to motor vehicle work. The subject of superheated steam, by which is meant the practice of raising steam to a temperature considerably in excess of the saturation point without greatly increasing its pressure, is by no means a new one. Considerable attention was given to this subject as early as 1850, when a number of exhaustive tests were made, some of them showing remarkable gains, ranging from 30 to 40 per cent of work done with the given amount of superheated steam over that done by the same weight of steam at a temperature corresponding to its pressure. These early experiments were largely confined to marine practice, probably owing to this being at that time the most active field for developing the steam engine.

The steam engine was then in a very primitive form, and the difficulties of lubrication and packing of stuffing boxes were such as to eventually cause the practice of superheating to drop into disuse, and at the same time the improvement in steam engines in other directions, such as the compounding of cylinders, the introduction of condensers and improvement in the valve-gear and general construction was such that the question of superheating was gradually abandoned. It is, however, true that the improvements of the steam engine since that time are in no way detrimental to the use of superheated steam. On the contrary, the engine of the present day is much more suited to the use of steam at extreme temperature than at the time when the trials were made. We now have mineral oils capable of standing high temperatures without disintegration; stuffing boxes are fitted with metallic packing; cylinders and steam pipes are covered with insulating materials much more efficient than any in use at that time, and the wearing surfaces of cylinders, pistons and valves are now machined to a nice-ty, the general result being that the difficulties confronting the user of superheated steam during the early days of its application are now generally eliminated.

The principal advantage of superheating

is the elimination of condensed water, it being possible to obtain under high temperatures an almost perfectly dry steam. Water is a disturbing element in steam engines and pipes at all times. It increases the friction of the wearing surfaces, interferes with the lubrication and chokes the discharge. It produces unequal strains in the metal and often gives leaks at joints which remain perfectly tight under dry steam. A valuable feature in the use of steam at high temperature is the avoidance of dripping stuffing boxes.

As the friction for superheated steam is much less than for saturated steam in passing, there is not so much loss in ports and passages, and the size of the pipes may be considerably reduced. The tendency in this country has been to use steam pipes which are much too large. Good practice with superheated steam recommends that the velocity should not be less than 100 feet per second in passing from the boiler to the engine.

As to the present effect of superheated steam on lubricating oils and stuffing box packings, it may be said that the present practice provides, and, in fact, already demands, oil and packing which will easily withstand these conditions. Mineral oils have supplanted the old vegetable oils and animal fats which were formerly used with machinery, and metallic steam packings have been universally adopted. Both of these were necessitated by the temperatures due to the steam pressures in the vicinity of 150 pounds to the square inch, the use of which is now common; hence we already have the way thoroughly paved for the introduction of superheated steam.

In connection with large engines a superheater is generally employed, a common construction of which is a system of tubes or pipes through which the steam is passed after leaving the boiler on its way to the engine, these pipes being subjected to intense heat either from hot furnace gases or by having a separate fire of their own. In motor vehicle use, however, the superheater is dispensed with and the boilers are generally of the flash type or so constructed that the steam is raised to the desired temperature in the dome of the boiler.

SPLENDID SPORT AT JOLIET

Chicago's loss proved, in one sense Joliet's gain. In another sense Chicago, strange as it may seem, was a gainer by its own loss. Two weeks ago the Chicago Automobile Club expected to add to its record of good things the distinction of having held the first successful automobile race meeting in the west—that is to say west of Detroit, for it had no thought of eclipsing, so late in the season, the late admirable effort of the Detroit association. The weather, however, settled the matter. Having been forced to abandon for the season its contemplated races, the Chicago club called its members together, decided to transfer as many entries as possible to Joliet, and to do all things possible to show its appreciation of the efforts of the gentlemen of that city.

Thus it happened that Joliet provided the best track and the best prizes ever offered in this part of the country, while the Chi-

ago men scooped everything in sight and enjoyed the splendid entertainment of the members of the Joliet Driving Club.

Ingalls Park is celebrated for the excellence of its track. It is built of sod, laid on edge, is a mile in circumference and is well banked. On Friday and Saturday of last week it was in splendid condition. Unfortunately high wind made fast time impossible. The first day it blew a gale from the south and the second day, from the north.

PUBLIC SPIRITED ENTERTAINERS.

The Joliet Driving Club is in no sense an association of automobilists. Not a single member owns a automobile. But it is made up of public-spirited men whose ambition is to attract attention to their city. The club was incorporated less than a month ago and determined on an up-to-date method of introducing itself to the pub-



SPLENDID SPORT AT JOLIET.

lic. It appointed a committee, of which William C. Crolius was made chairman, and gave it full power to proceed with the event, the only condition exacted being that the races must be made a success and a credit to the little city.

The opening event, and originally planned, was a road race from Chicago to the track. It was expected that none but the big machines would compete. But so numerous were the entries that the club decided to offer five prizes instead of one. The same generosity characterized the entire proceedings. There were cups, and good ones, in profusion for those capable of winning them. Indeed, the referee claims to have scored a record, inasmuch as he received from the club and a number of generous friends one of the best cups of the lot for his distinguished services as a spectator!

START OF THE ROAD RACE.

At an early hour Friday morning there had gathered at the intersection of Western and Archer avenues about twenty vehicles of all descriptions, ready for the fray. It had been decided in advance to send them away at intervals of from 3 to 5 minutes, starting with the motor cycles. The first away was Joseph Gunther, on an Autorette, followed closely by James Rankin, Jr., of Akron, O., on an Orient motor bicycle. Then went W. L. Hibbard, in a Locomobile; A. J. McDuffee, Locomobile surrey; Bert Adams, Mobile; Pardee, Mobile; Walter R. Smith, Chicago Motor Vehicle Co.; F. C. Donald, Winton; Bechtel, Milwaukee; Brinckerhoff, Locomobile; Dr. Davis, Locomobile, and J. B. Burdette, Winton. A few minutes later the Mobile delivery wagon started, the company having kindly sent it to render any assistance needed on the road. Half an hour elapsed and then E. B. Shaw started with his 12-horsepower Panhard, followed 2 minutes later by his brother Robert with an 8-horsepower Panhard, carrying the starter, Dr. Pine and the writer.

IT WAS A WILD RIDE.

The road selected was through Summit, Willow Springs, Sag Bridge and Lockport. Instead of following the old bicycle road and passing through Lamont, the competitors were required to climb Sag Bridge hill one of the worst in Illinois.

Shaw realized that with an 8-horsepower carriage it would be a difficult job to keep

anywhere near his brother with the more powerful motor, and had evidently determined to make up, as nearly as possible, by more dexterous and daring handling. At any rate, no obstacle, great or small, stood in the way. Up hill and down the machine traveled at its best—and that, down hill, meant about as fast as the average man cares to travel—until it became more comfortable to view the vanishing scenery than the road ahead. Few operators in this country would have dared take the down grades as did the New York to Chicago record holder, for it was the "dips" only which enabled him to make the excellent comparative showing credited to him.

STOPS BY THE WAYSIDE.

The first vehicle was overtaken 5 miles from the start. It was a Mobile attended by the delivery wagon, but was quickly placed in order and finished early in the afternoon. Just before reaching the hill, about 20 miles from the start, Brinckerhoff and Adams were passed, both making some adjustment. Half-way up the hill Donald was found, delayed by the loosening of the chain adjusting device, while McDuffee was overtaken at the top of the hill, though running without trouble. Dr. Davis was passed next and a mile or two further on Mr. Crowdus, with two of his electric vehicles, was found taking things serenely, not being a competitor. The next victim was Mr. Bechtel, discovered slumbering peacefully under a hedge while his passenger had gone in search of gasoline. By this time the Panhard had reached Lockport and there overtook Gunther moving along merrily, but having been delayed 15 minutes by a broken chain.

THE PRIZE WINNERS.

The road, while good enough for touring, was by no means an ideal course for racing. For 10 miles before entering Lockport there are a succession of hills, some of them fairly steep and all of them rough.

Mr. Burdett, who was accompanied by his wife, was the first arrival, followed closely by Smith and Hibbard. Three minutes later came E. B. Shaw, whose big Panhard beat the smaller one 10 minutes. The prize winners were as follows:

Gasoline vehicles, J. B. Burdett, 1:49:18.
Steam vehicles, W. L. Hibbard, 2:33:53.
Motor cycles, J. F. Gunther, 2:57:12.
Panhards, E. B. Shaw, 1:33:32, first;
Robert Shaw, 1:43:28, second.

Hibbard was delayed 15 minutes by the

SPLENDID SPORT AT JOLIET.

burning of a rubber blanket, which set fire to the back of the seat of his carriage. The only other who finished before 1 o'clock when the checking station closed, was Dr. Davis, whose time was 3:02:44.

RACES AT THE TRACK.

The races were to have started at 2 p. m., but it was half an hour later before the first event was called. The management of the first day was not of the best, but the delays were caused by troubles with machines due to the severe strain of the road race in the morning.

The first event was 10 miles, for heavy-weight gasoline machines, in which there were but two entries. E. B. Shaw won rather easily from Robert Shaw in 27:22. Perhaps the best race of the day was a half-mile for steam carriages, in which W. J. Eldredge, manager of the Milwaukee Automobile Co.'s Chicago branch, won by a yard in a vehicle owned by a resident of Joliet. C. H. Tucker's Locomobile was second and Dr. Davis, also operating a Locomobile, third.

In the absence of a number of competitors in the 10-mile race for gasoline vehicles between 1,000 and 2,000 pounds, a handicap was arranged between Burdett, 5 minutes; Robert Shaw, 3 minutes, and E. B. Shaw, scratch. Robert Shaw withdrew at 3 miles and Burdett, instead of losing ground, gained steadily. He had made over 2 miles in the 5 minutes allowed him and lapped his opponent at 9 1-2 miles, finishing about 100 yards ahead.

ACCIDENT TO THE RACER.

In a 5-mile event for steam carriages, Hibbard, in a Locomobile racer, essayed to give all the other competitors a start of 1m., 30s. His chain parted, however, at the start. The race was won by Mr. Tucker's Locomobile, Dr. Davis second, Brinckerhoff third. Hibbard then rode an exhibition mile in 1:53.

The program for the day closed with a motor cycle race in which Rankin, with an Orient motor bicycle, gave Gunther, with an Autorette, a start of 220 yards and won easily in 1:35.

A GREAT IMPROVEMENT.

The second day's racing was very much more satisfactory, the fields being larger, the starts more prompt, the officials more efficient and the attendance better. The two Shaws were sent on a long journey on

the stroke of 2 o'clock, E. B. attempting to ride 25 miles while his brother rode 20, a task of which he proved incapable. After gaining three quarters of a mile, he lost ground and was less than half a mile ahead when the smaller vehicle finished in 45:23 1-5. E. B. Shaw's time for 20 miles was 44:05. A 5-mile race for stock steam carriages followed. It was a good race all the way between the first two, and was won by less than a length by Lane, from Hibbard, both using Locomobiles. Adams, in a Mobile, was third. The winner's time was 12:44 1-5. Two Crowdus electric runabouts then gave an exhibition mile race. Mr. Crowdus won in 3:53 3-5.

THE EVENT OF THE MEETING.

The fourth event, which had been arranged during the morning, proved to be the best race of the meeting. It was a one-mile race for steam carriages, operated by ladies. The competitors were Mrs. F. C. Davis, Mrs. Burdett and Mrs. Tucker. Mrs. Tucker led at the start, but was passed at the quarter pole by Mrs. Burdett, who kept the lead into the stretch. Then Mrs. Tucker commenced to close the gap, took the lead in the last 10 yards and won by 2 feet. The race was the most popular of the meeting by reason of the sex of the operators, the closeness of the finish and the masterly way in which the vehicles were handled.

With a racket which would have done credit to a regiment of artillery, three machines came out for the race of 5 miles for gasoline vehicles under 1,000 pounds. They were a Friedman three-wheeler, a Friedman four-wheeler and a machine made and entered by John Wickstrom, of Chicago. They were out for blood and all had discarded mufflers. The three-wheeler took the lead at the start and the result was never in doubt. It lapped the other pair at 3 $\frac{1}{2}$ miles and, won with ease in 12:11.

Burdett won again, by defeating E. F. Brown, in a race of 5 miles by about 300 yards. The vehicles were together for about 2 miles, but after that Burdett seemed to open a gap as he pleased and won in 12:29.

HIBBARD AND THE LOCO RACER.

Hibbard and his Locomobile racer furnished splendid sport. In the absence of a competitor in a one-mile race for steam racers, Hibbard agreed to give all comers a start of 20 seconds in a mile. His competitors, Brinckerhoff, Lane, Davis, Hall and

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McDuffee, started so well that the impression prevailed, even after Hibbard had gone a quarter, that he was hopelessly handicapped. Nevertheless he had the field well in hand at the three-quarter pole and won by 150 yards in 1:33½. Immediately thereafter he rode an exhibition mile in 1:27 1-5, going the first half in :43 2-5. He was permitted to start again, though not taking part in the race, in the next event, distance one mile, for vehicles of all classes except racers, under 1,000 pounds. His time was exactly the same as before, but under more favorable conditions as regards wind and temperature, can be reduced with ease to 1:15. The time of the half-mile at the second attempt was 44 seconds.

In the mile race referred to, McDuffee's Locomobile surrey won, 2:13 2-5, the Friedman three-wheeler being second and Brinckerhoff, in a Locomobile, third. The closing event was a 3-mile race for Motor bicycles in which F. B. Hart, on a Mitchell, finished alone, Rankin losing the belt of his Orient in the first mile.

Aside from the racing, every possible attention was shown to the visitors. All of the club rooms in the city were thrown open to them and in addition there were theatre parties and other attentions calculated to inspire all hands with a desire to come again next year, when the club holds its second meeting. Especially are thanks due to Mr. Crolius, who was busy night and day to insure the success of the meet, and to Frank S. Allen, who, as entertainer and official, was admirable.

Most of the competitors returned to Chicago by road on Sunday.

The Improved Crestmobile

The Crestmobile, the product of the Crest Mfg. Co., of Cambridge, Mass., differs materially in many respects from the general run of light motor carriages. There have been a number of improvements made in this vehicle. One of the recent changes is the adoption of side instead of the center steering previously used. As is usual in this form of steering lever it is controlled by the left

hand, leaving the right free to attend to the speed control.

A device is now provided so that the motor may be started from the seat. The body is of the piano box pattern and contains no mechanism. The gasoline tank is under the seat and so arranged that it can be removed for filling, or in case it is desired to store the vehicle where objection might be raised against the gasoline on account of insurance. The seat is now the full width instead of the three-quarter width previously used. The running gear has been strengthened, the tubing and wheels being the same as used in a majority of the light steam vehicles. The tires are also of the same general character as those used on runabouts, much heavier.



than the Crestmobile, which assures long life.

The motor is of the single cylinder, air-cooled type. For ordinary purposes the vehicle is speeded to from 12 to 15 miles per hour, but for city use, or where the roads are fairly good and the grades are slight, it may be speeded to from 15 to 25 by merely changing a single sprocket. Owing to the extreme simplicity and accessibility of the driving mechanism, this machine may be operated by those entirely unfamiliar with mechanics, many being successfully handled by ladies and children.



TEST OF A FIVE-TON TRUCK

Some time ago, says the Boston Transcript, the superintendent of a big manufacturing plant in the wilds of Middlesex county, conceived the idea of transporting his product and material to and from Boston by means of an automobile truck that would run on country roads and city streets direct to the destination, instead of by a combination of freight train and horse-drawn wagons. So he sent in his order, and in the latter part of the summer he had shipped to his yards, ready for use, a big steam van, supposed to be capable of hauling 5 tons, and powerful enough to make a fair speed, at that. He placed the van in service not far from the first of September, and for 30 days he tested it by actual road trial. Now he has shipped the vehicle back, satisfied that it falls short of being a paying business proposition. He has offered to take a van of the same sort, if built with slightly heavier engine.

The superintendent referred to is Henry Howard, in charge of the isolated works of the Merrimac Chemical Co. His idea was to use the truck in carrying heavy carboys of acid to the company's works in East Boston, and in making a return trip from the Boston office to Woburn. The run from Woburn to East Boston is about 14 miles by way of Malden, Everett and Chelsea. From there the van was to be taken across the ferry and used in carrying heavy goods to one or two points about town, a matter of 4 or 5 miles. Then it was to be run back to Woburn again, 14 miles more. Thus a day's work was to mean about 30 to 33 miles.

And the truck actually accomplished it. Starting from Woburn at 5 o'clock in the morning, Mr. Howard says, its average time for the run to East Boston was $2\frac{1}{2}$ hours and it was customarily back at the factory in Woburn again, after making its run to the Boston office, by 3 o'clock or a little after. The point about the thing was that it would not carry as much as it was expected to carry. Instead of 5 tons at a load it was found to be able to transport only about 3 tons, and it was in this discrepancy that it fell short of being a paying

investment. By carrying a full load, Mr. Howard figures that it would have proved a saving over the railroad and wagon method of handling goods.

The quality of the roads enters into the problem somewhat; but in general the roads were fair. The worst stretch was between Woburn and Winchester, and it was on this stretch, not more than a mile from the factory, that the van stuck fast when it first tried to carry 5 tons on its East Boston trip. It had been run over the roads empty the first day of the trial, and had worked well. Then on the second day, loaded to the limit, it struck this soft place in the road and sank its wheels enough to make progress impossible. The men in charge proceeded to acquire information and experience in the art of getting a cumbersome road-locomotive out of a mudhole. They found first that the more the power was applied, the deeper the wheels ground themselves into the mire. There wasn't power enough for the machine to lift itself out; that was all. It was different from a horse-drawn van in a similar condition, for the horses exert a drawing power which lifts as well as pulls; whereas the self-propeller had no element of "lift" in its motion; it merely ground deeper.

It did not take them long to realize that other methods would be needed. So they got some lengths of plank, and scraping away in front of the wheels, laid down the plank in a way to form a kind of temporary pavement or runway. On these the van climbed out of the mud without much trouble.

On every other day of its trial the van was loaded light and the superintendent says there was no trouble with it in any way after that experience in the mudhole. A new hard road all the way in town would have made its use more of a success, but it managed very well over the roads now available. In other ways, too, it compared favorably with a horse-drawn van. It was manipulated easily and quickly in backing up to freightshed or warehouse to take on goods. It made very little trouble among horses. It was not too heavy to be trans-

BELTS FOR MOTOR BICYCLES.

ported by the ferryboats, and with its broad wheels it made its way over all kinds of city pavement easily and with fair speed. There were no hills on the route that were not surmounted easily, and on a good stretch of road the speed was about 6 or 7 miles per hour.

As for the van itself, it looked much like an ordinary vehicle with a little caboose in front; except that the body of the vehicle projects more than the usual distance back from the rear axle, and the caboose could be seen to enclose the driver's seat with what looked like a small stove or furnace in front of it. If you climbed into the seat, you would have this stove arrangement—which was really an annular water-tube boiler, the fire in the middle and the tubes coiled around it—with the steering wheel slanting upward between your knees and the throttle and reverse lever just below, with the brake-pedal in reach of your foot. At the right and left of the boiler, the corners of the caboose were made into miniature coal bunkers, carrying just about

coal enough to run the van on one round trip to Boston.

The low-speed gearing was 17 to 1, the high-speed 11 to 1, and the shift from one to the other, when it was made at all, had to be made at a point just forward of the rear wheels, so that the driver had to alight and step around to the side of his van whenever the change was made. The whole van was 21 feet long and 6 feet 2 inches in width outside of the hubs, or 5 feet 4 inches inside hubs. The wheel base was 11 feet 3 inches, over which the box of the body was 14 feet 6 inches. At full speed the van developed about 35 horsepower. The front or steering wheels were 33 inches in diameter, with 4½-inch steel tires, but because of the extra work required of the driving wheels, it was thought necessary to have them 39 inches in diameter with 8-inch steel tires. The rig was of the Thorneycroft pattern, and is of a type used, says Mr. Howard, pretty generally for heavy road traffic in England. But they have fine roads in Eng-

BELTS FOR MOTOR BICYCLES

The motor bicycle has so far passed the experimental stage that its utility is assured and the number of its devotees increases as rapidly as riders have opportunities to test it. There are, however, points wherein there is room for improvement. One point is the brake. There is no question of the convenience of a back-pedaling brake on any bicycle, and particularly in the case of a motorcycle, which is generally driven at a much higher speed than the manually driven machine. The application of a hand brake, particularly to the front wheel, is both inconvenient and dangerous. But while the coaster brakes on the market are, in many cases, extremely convenient and all that could be desired on a light machine, they are totally inadequate for use on one weighing 100 pounds and often nearly twice that weight.

The writer has met with two serious accidents, both of which were directly due to the failure of the brake, and that one of the best on the market. Either a much heavier and more durable hub brake should be used or some such appliance as is used

on several English machines, consisting of a free wheel and a tire brake applied by the backward throw of the pedal, should be devised for this purpose.

Another cause of much woriment to the motor bicyclist is the power transmission. The chain connection between motor and driving wheel, as at present devised, is unsatisfactory, resulting in broken chains and an unpleasant vibration in the machine. While the latter trouble is largely overcome by the use of a flexible belt, even that has troubles of its own, particularly that of slipping, and the breakage is by no means disposed of. At the recent meeting at Joliet were two motor bicycles, both of which were near the top of the list of American manufacture. On one was used a flat belt of generous proportions, while the other was equipped with a round belt of somewhat smaller sectional area. Both showed evidence of breakage and both slipped.

This article is not written with the idea of criticism, but to call the attention of the manufacturers to the two weak features of an otherwise satisfactory machine. With

THE HANS RENOLD SILENT CHAIN.

all its faults, real or imaginary, the writer would not, under any consideration, be without a motor bicycle. With a view to its improvement two suggestions in the line of belts are offered.

One is the design of N. J. Sorensen, of Chicago, who is using a Mitchell machine equipped for a round belt, and has had made an endless rawhide rope which the makers have absolutely guaranteed against stretching and which, up to date, has met the expectations of the designer.

The writer has recently had made an endless three-ply belt, the outer sections of which are tanned leather and the inner rawhide. The material was first cut to

the desired width and thickness, after which it was thoroughly soaked and stretched to the utmost extent, and in this condition nailed by the ends and left to dry. When thoroughly dry the strips were cut to the proper length and joined by two rows of hand stitching, running the entire length. The belt was then cut and hammered into a nearly semicircular section. The tension idler, which was constructed for a round belt, was replaced with one having a flat face, as it runs on the outer surface of the belt, which is, of course, flat. This belt has not been in use long enough to warrant conclusion as to its ultimate value, but results are promising.

THE HANS RENOLD SILENT CHAIN

English mechanics and engineers have given general approval to what is known as the Renold system of chain power transmission. It is the invention of Hans Renold, of Manchester, and is now manufactured under his American patents by the Ewart Mfg. Co., under the name of the Silent Chain. It is presented to the American public with the endorsement of large English users and during several years of severe and varied service has been developed into a transmission device of such perfect action that the American title is not a misnomer.

It is in regular service at speeds as high as 1,500 feet per minute and accomplishes its work safely, smoothly and with great efficiency. To more readily explain how this is accomplished, a brief description of the action of the ordinary chain and sprockets will be given, tending to show the cause of the unavoidable noise and the speed limitations.

It is a popular belief that when a chain gears into a toothed wheel, all the teeth entering the chain are simultaneously in action. There is a possibility, though remote, of this condition existing when the chain is new and the sprockets are perfectly cut, but in a short time, no matter how well the chain be made, the pins begin to bed themselves into their bearings, producing a lengthening of the pitch, which is constantly increased by wear. Eventually this throws the whole load on some one tooth. With only one tooth in action at

any one time it is evident that the contact between chain and wheel must be continually passing from one tooth to its neighbor, producing a series of blows on the wheel and on the chain, more or less severe, depending on the accuracy with which the chain is made and the design and accuracy of the tooth. There are many excellently constructed chains, and if always used with perfectly cut sprockets these troubles would be reduced to a minimum, but unfortunately the number of perfectly cut and correctly hardened sprockets is extremely low, with the result that more or less rattle is nearly always present and is greatly increased as the speed becomes higher.

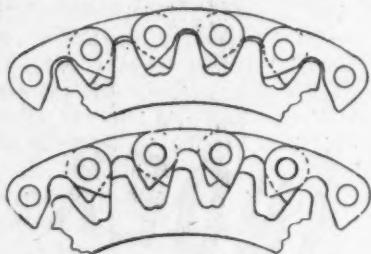
It is also undoubtedly true that this slipping from tooth to tooth greatly decreases the life of both chain and sprocket beyond the natural driving wear. In the Renold system it is designed to make a chain and wheel that shall always be a perfect fit with each other, irrespective of the stretch of the chain. Such a gear will distribute the load between all the teeth in mesh and the cause of the noise and the kindred evils of wear will be reduced to the lowest degree.

The accompanying illustration shows the Renold chain and its action on the sprocket, both when the chain is in pitch and when the pitch has been lengthened through wear. It will be noticed that the chain is in contact with the wheel only on the faces of the teeth and not on the root circle at any time. The chain automatically assumes its place on the wheel, thus distributing the

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THE HANS RENOLD SILENT CHAIN.

load equally between all the teeth in mesh. As the chain elongates from its use it takes a position farther and farther out on the wheel teeth, forming a larger pitch circle proportionate to the increased pitch. In this way the initial perfection of action, which is lost in the ordinary chain, as soon as the wear is started, is



present to the very last. Each link comes to its seat by a rolling action, eliminating the wear incident to the sliding up and down the tooth.

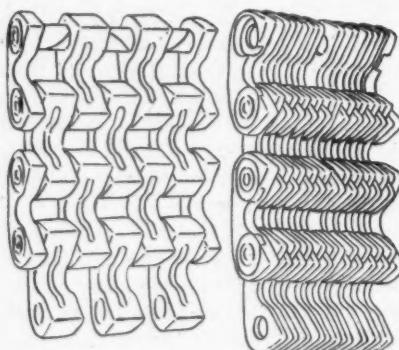
The specific claims made for this chain by the manufacturers are absolutely silent running and high speed possibilities. In addition to these the strength of the chain may be increased indefinitely by increasing the width without increasing the pitch. Another point on which considerable stress is laid, is that when a chain becomes too wide for convenience in manufacture, or in handling, two chains may be run side by side on the same sprocket because of the fact that each chain automatically adjusts itself to the sprockets and will bear its proper share of the load.

The suggestion is immediate that the high speed possibilities and the silent qualities of this chain would make it peculiarly

adaptable to motor vehicle use. As an evidence of durability, the manufacturers state that a motor carriage was driven 30,000 miles with a chain of this type, which was in good order and entirely serviceable after the performance, notwithstanding the fact that the normal chain speed was 2,000 feet per minute.

As to the construction of this chain, its simplest form consists of plate links of peculiar shape joined by shouldered studs and washers. It is also made with the heads of the studs and the washers countersunk, thus making what is known as the flush side chain. For heavier service what is known as the multiple block type is furnished, which is also of the flush side pattern.

The sprockets used differ from the usual



type and greatly resemble the ordinary spur gear, and one of them, generally the driven, is invariably flanged. As the sprocket wheels are an essential part of the gear, no chains are supplied without wheels except for repairs.



ERRORS OF THE DAILY PRESS

The matter of the price of automobiles continues to agitate the space writers of the daily press who, in days gone by, devoted their attention to the bicycle trade, and by statements which were absolutely false drew into the business so many adventurers as to place it in the unenviable position it occupies to-day. There is the one great difference between the cycle and the automobile business that it was possible to enter the one with nominal capital, a condition which is impossible in the other. But the continual outcry about prices, the representation that makers are fattening at the expense of the public, and the encouragement of the belief that there are "millions in it" must inevitably lead to an influx of capital which will eventually result in the injury of the legitimate manufacturer.

It is plainly the duty of the manufacturer to remove to the best of his ability the impression that the demand for vehicles so exceeds the demand that he is bound to advance prices, not because of the greater cost, but to save himself from the importunities of prospective buyers! The public knows that the price of automobiles has been raised and is likely to be raised still higher. It supposes that this is due to the desire of the makers to obtain inordinate profits. It should be made as plain as possible that the real reason is that automobiles cost more to build than formerly, because of the additions made to them to insure speed, reliability and safety.

The vehicle of to-day is an entirely different thing to that of a couple of seasons ago. The cumbrous, poorly constructed things of 1899 have given place to machines which may be relied on to go wherever their owners wish. But the change has been accomplished by the expenditure of vast sums. Factory development has cost fortunes. The public should not be allowed to believe that the one cost of the machine is in the metal and labor consumed in its make-up.

It may become necessary for the makers to recognize their friends and their enemies of the press. At present the papers, with rare exceptions, are ready to clamor at the

least possible opportunity about the extortionate prices. A campaign of education, undertaken by some responsible head, might be the means of preventing a continuance of this condition and great injury to the business.

Another feature of the work of the daily press is the gross exaggeration of the reports of accidents. It has long been the custom of *MOTOR AGE* to follow up the reports and endeavor to trace the causes for the benefit of readers. Possibly as many as twenty reports of accidents are received at this office weekly. In nearly every case the daily makes it appear that there has been a total loss of a vehicle at the very least, not infrequently accompanied by serious injury to the occupant. In nine cases out of ten the reports prove to have been grossly exaggerated. In few of them are there the results such as to warrant the least excitement. They are, in short, the creations of men sent out to hunt up something sensational and determined to fill the bill.

This style of treatment of the automobile and its makers is an injustice. Serious accidents should be reported, of course, but to convey to the public the impression that the machines are everlasting in trouble is unfair. Here, for example, is a choice morsel anent the late road race from Chicago to Joliet, clipped from the *Chicago News*:

"The eight competitors that failed to get inside the time limit straggled into Joliet some time during the afternoon and many of them were sorry looking sights. Some of the farmers along the way were considerably richer for the service they gave to the unfortunate racers, and one Lemont man earned three fees by towing in that many machines during the late afternoon. The unfortunates were careful to keep out of the way of their friends while the machines were being unloaded, and as soon as darkness fell over the prison city last night there was a grand rush for the repair shops, and the sound of hammer and tongs was to be heard long into the night."

"President F. C. Donald, of the Chicago Automobile Club, was one of the last men to arrive who was willing that his name

ERRORS OF THE PRESS.

should be known, having spent over four hours and a half in making the distance of forty miles. Charles Howard Tucker and his wife had a narrow escape from being cremated, as the machine caught fire near Sag, and it was not until some passerby called their attention to it that they knew of their danger, so intense was their interest in the progress that they were making."

The facts in relation to the matter are that every vehicle which started from Chicago arrived at the track in time to compete in the races that same afternoon. Mr. Donald's trouble was due to a broken bolt and delayed him perhaps an hour. Mr. Tucker's vehicle did not take fire. There were no night repairs. No vehicles were towed into Lamont or any other town. No farmer gathered any fees, except it may have been for gasoline. So far as anyone knows there is not a repair shop in Joliet. If the News, instead of printing an unwarranted attack on the automobiles, had tackled the politicians who permit such disgusting roads to exist it would have rendered a service to all instead of attacking an industry from which hundreds of its readers obtain their daily bread.

Under the circumstances it is pleasing to find in the Record-Herald, which was formerly closely allied with the News, the following sensible matter on the subject of road improvement:

"Until the state enters upon an extended system of road improvement it is very clear that the utilization of the modern automobile by Chicagoans as a pleasure vehicle must be largely confined to the parks, boulevards and highways leading to the neighboring suburbs. In the race to Joliet, in which there were fifteen starters, some of the worst road in the west was encountered. 'The road could not have been rougher,' said one of the occupants of the winning automobile, 'and the machine frequently would strike a hillock, throwing us heavily against the sides of the vehicle.'

"The automobile has a great work before it in Illinois in the way of road improvement.

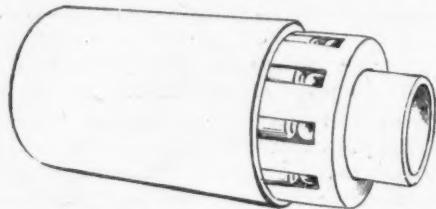
It is expected that the development of the automobile will gradually but surely bring a public sentiment to bear upon legislatures that will result in the enactment of new laws for the construction of country highways that are equal in smoothness and hardness to macadamized boulevards."

Standard Roller Bearings

The Standard Roller Bearing Co., of Philadelphia, is devoting attention to automobile wheels and running gears, supplied with their bearings. Two forms of running gears are being constructed, one for light two-passenger vehicles and the other for heavy carriages.

In the matter of wheels the company is furnishing both complete wheels of the Archibald pattern and the bearing members applicable to hubs of any preferred design, and both rear and steering axles. It also furnishes bearings adapted to the driving axle and a driving wheel provided with an attached gear for direct power transmission. Its bearing consists of an inner and outer hardened steel sleeve, and a bearing cage, containing the rollers and balls for taking the end thrust of the rollers.

Bearings of this pattern are listed for use



on shafts from 1 to 3 inches in diameter. The company also manufactures an extensive line of both roller and ball thrust bearings. In the ball thrust bearings two or more rows of balls are used, according to the nature of the bearings. The roller thrust bearings are made in two patterns, a plain roller pattern, in which two or more rows of rollers are used, and a taper roller end thrust, in which but one row of taper rollers is used.



CHAIN TRANSMISSION OF POWER IS SATISFACTORY

ONLY when frictional rivet surface and tensile strength are large in proportion to the working load.



NO. 155 FOR LIGHT RUNABOUTS

Equip your machines with large chains and avoid trouble. *Diamond Chains* have large nickel steel hard rivets, are accurate and highly finished.

The Automobile and Cycle Parts Co.

DIAMOND CHAIN FACTORY
INDIANAPOLIS, IND.



THE GOODYEAR
PUNCTURE PROOF TIRE
OUTWEARS
ALL OTHERS

The Goodyear Tire and Rubber Co.

AKRON, OHIO.

LARGEST TIRE MAKERS IN THE WORLD

TEST OF A SPERRY BATTERY

A few days ago a Sperry battery, used on a Waverley runabout since spring, was tested by electricians of the Narragansett Electric Lighting Co. The report was very favorable. After running 2,000 miles (cyclometer measurement) there was no evidence of deterioration, and this indicates that the battery may be good for 2,000 or 3,000 additional miles, or more than the average person will ride in two years.

An interesting report of tests and description of battery in detail is in the last number of the Electrical World.

The Sperry battery is an improved form of the Plante type of battery and is designed to be free from the difficulties that have attended the use of the applied sponge plate. The grid is made of thin, pure sheet lead corrugated horizontally. In the bottom of the hollows formed by the corrugations numbers of small trapezoidal holes are punched; the punch also cuts diagonally across the trapezoid, and instead of making a clean hole, fins are left which project on either side of the plate. The whole plate when punched resembles a corrugated grater, except that the fins are longer and triangular in shape. These projections are then spread wider apart, so that a pressure on the plate will cause them to bend down in a direction away from the holes from which the fins project.

The material which is to become active is spread in the form of a powder on both sides of the grid, filling up the corrugations and being in sufficient quantity to make a flat plate of usual thickness after press-welding. The whole is then subjected to pressure—about 1,000 pounds per square inch of surface—which forms it into a solid mass. The material is bound to the grid by being pressed together into a continuous mass, which is on both sides of the grid, and is welded through the multitude of small holes, thereby riveting itself in the grid. Additional hold is furnished by the fins, which are bent down and clinched over the active material, and thus retain the material at the surface.

The retention of fins and riveting under pressure of the powder into a solid mass cannot be successfully accomplished with

every form of material to become active, but it is stated that the material used in the Sperry battery welds up strongly in the press, and after the chemical formation becomes hard like soapstone. This active material consists of 80 or 85 per cent of finely divided pure lead, obtained by dissolving a precipitation, to which is added 15 or 20 per cent of lead oxide. These are thoroughly mixed, and to the mass thus formed is added about 1-25 of a compound of alkaline and other ingredients.

The alkaline salts and other ingredients are themselves inert, and their function is two-fold. First, to render the material porous by dissolving out when the plate is formed, leaving numberless pores throughout the mass, and, second, they have the peculiar property of causing the mass to harden on forming instead of soften, as is the case with pasted or other plates formed by the Plante process.

The composition of the active material used, its method of application, and the formation in the Sperry battery are such, however, that trouble from disintegration and dropping away of active material is obviated, and the makers claim, and their tests seem to indicate, that the plates are extremely hard, solid and durable. The corrugation of the grid horizontally allows proper expansion and relieves the plate of tendency to buckle. As an additional precaution, however, Mr. Sperry has devised the pyroxylin coating which is applied to the outside of the plate and covers it, passing down one side, under the bottom of the plate and up the other side. It is evident that if any active material should be loosened by any extraordinary circumstances it would not be able to drop off the plate, being held in position by the outside coating. If a particle of material should by any chance drop off, it will still be retained in the pyroxylin envelope, and would not be able to short-circuit the battery. This covering is made of open mesh cotton cloth, such as cheese cloth, which is chemically treated, forming a cellulose nitrate which is termed "pyroxylin." The compound is of the same general character as gun cotton, which is a high explosive. The addition of

ENDURANCE RUN

FOUR ENTRIES
FOUR FIRST-CLASS CERTIFICATES



Of seven first-class certificates given steam carriages, Whites took four. Three finished ahead of any other steam carriage; the fourth was passed by only one. *

*Average 862 yards more per hour than any other.
We rest our case on that record.*

WHITE SEWING MACHINE COMPANY
CLEVELAND, OHIO

TEST OF A SPERRY BATTERY.

a small quantity of nitro-benzol renders it inert.

To the sheet of pyroxylon thus formed is applied a coating of pure cellulose. This is formed by treating fiber—in which the non-cellulose constituents belong to the class of aldehydes—with sulphurous acid. The fiber after being washed is again treated with sulphurous acid, leaving out cellulose. This is then pulped and applied under pressure to the pyroxylon sheet. The envelope when finished is ribbed vertically, so that the electrolyte can circulate freely along the surface of the plate after passing through the envelope.

The jars in which the elements are placed are of the hard rubber variety, but different from the usual hard rubber jar, in that they have a series of ribs, capped with soft rubber, extending across the bottom of the cell. On these soft resilient ribs rest the plates, which are in this way relieved from excessive shock or jar. The separators are the usual thin, perforated, ribbed, hard rubber.

A Sperry battery of 44 cells in series weighs 1,005 pounds gross, or 23 pounds each. The discharge rate was nearly 40 amperes, and the average voltage 1,975. The curve shows the usual results of 1.75 amperes, 9.187 ampere-hours, and 18.15 watt-hours per pound gross weight at 5½-hour discharge, giving at this excessive rate of discharge 40 pounds per horse-power, corresponding to an energy sufficient to raise its own weight against gravity at sea level about 9 miles. This is equivalent to 2.65 amperes, 7.95 ampere-hours, 5.03 watts and 15.09 watt-hours per pound at the 3-hour rate. There are several sizes of these cells manufactured, the two principal ones being 2 inches by 7½ inches by 10½ inches, and weighing 18 pounds gross, and 3 inches by 7½ inches by 10½ inches, and weighing 22.8 pounds.

A number of life tests have been made of this battery, both in laboratories and on vehicles and in practical work. One vehicle has now made about 7,700 miles with the batteries with a loss of 28 per cent of the original capacity. Tests recently conducted under the general supervision of

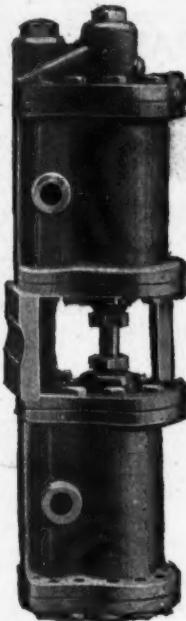
Prof. John W. Langley of the Case School of Applied Science, show that the battery carried through a uniform rate of discharge of one ampere per pound until the carriage had run the equivalent of 3,060 miles. This test shows the capacity of the battery for the last 10 discharges to be 10 per cent (83.35.91.8) in excess of the first 10 discharges. The report indicates that tests up to this point had failed to reveal any indication that the battery had started to fall off in capacity. The 44th discharge of this battery, taking it at one ampere per pound of complete working cell, gives a mean potential difference throughout the curve of over two volts, namely 2.014.

About Rigs That Run

The St. Louis Motor Carriage Co., whose machine went through the endurance test in such splendid style, has lately received a number of testimonials, of which the following, written by Dr. A. L. Hazen, of Burlington, Vt., is a sample:

"I have returned after eight days' travel through the country with my car, which has been a continual round trip of pleasure. My carriage did perfect work under all circumstances, ascending and descending three mountains, through sand and places where other cars were obliged to call upon the farmers to pull them out, and up the same hill—this made me smile to go where others were stuck. On the whole the roads were very good. We encountered one dreadful thunder-storm, making several hours' delay, yet we made the round trip in a little less than 5 days, a distance of 600 miles, through the following places: From Burlington, Vt., to Waterbury, Montpelier, Topsham, Newberry, Littleton, N. H., Maplewood and Twin Mountains, Fabya, Crawford, Notch, through the White Mountains, McConway, Bridgton and Portland, Me. We returned by way of Old Orchard Beach, Rochester, Barrington, Epsom, Concord, N. H., Warren, Newbury, Clarmont, Cavendish, Mt. Holly, Ludlow, Rutland and Burlington, Vt. I give you the route taken, thinking you may have been over a portion of the country we went through."





Victor Steam Air AND Steam Water Pumps

Space required in carriage 9 inches in height by 3 inches in width. Weight 4½ pounds each. Steam pistons 1½ inches in diameter by 2-inch stroke. Water pump piston 1 inch in diameter by 2-inch stroke. Capacity of water pump 1½ gallons of water per minute against 200 pounds boiler pressure. Air pump piston 1½ inches in diameter by 2-inch stroke. Capacity of air pump 80 pounds pressure on fuel tanks or tires. Pipe connections $\frac{1}{2}$ -inch.

OVERMAN AUTOMOBILE COMPANY,
81 Fulton Street, NEW YORK.

The Reputation of the

Gasmobile

Is Justified by Actual Demonstration

It has carried off the honors wherever shown. Not alone the best by performance but conceded the handsomest, most graceful, easiest controlled and most reliable American built carriage.

First of gasoline vehicles, Merrick Road, March, 1900.
Blue Ribbon—Long Island Endurance Test, April, 1901.
First prize, Guttenburg, N. J., September, 1900.
Winner of every contest for gasoline vehicles at New York and Philadelphia automobile shows. These contests include starting, stopping and obstacle events.
First prize, Newport, September, 1901.
NEW YORK-BUFFALO ENDURANCE RUN—Two first class certificates.
Silver Cup, Providence, October 18, 1901.

AWARDED GOLD MEDAL, PAN-AMERICAN EXPOSITION

Automobile Company of America, *135 Broadway,
NEW YORK.*
Factory: Marion (Jersey City) N. J.

SNYDER DESERTS HIS COMPANIONS

Homer P. Snyder and his co-directors of the H. P. Snyder Co., defendants in the famous bottom bracket suit, have deserted their companions in the defence. An agreement was made between Snyder, Fred Johnson, W. H. Crosby, Frank Eldredge and others, representing some of the strongest of the anti-trust makers of cycles, to fight the matter to the end. There was a limit to the agreement but it was understood that it should be renewed as often and for as long a time as might be necessary. Snyder, without notice to his fellow defendants, took advantage of the technical termination of the agreement to make a settlement with the American Bicycle Co. He agreed to allow judgment to be entered against him, admitting infringement of the patent. Eight days notice will be given of the application to the court for the ratification of the settlement so that the other parties to the agreement may appear.

The action of Snyder may or may not prejudice the cases of the other defendants. The attorneys for the defence, Messrs. Dyrenforth & Dyrenforth & Lee, are of opinion that, having become party defendants, even though their names do not appear on the records of the court, the other concerns which have been fighting the patent will be entitled to the benefit of the evidence so far taken, in which event their case will not be seriously injured by Snyder's action.

There will be a conference of the parties interested in Chicago this week.

W. H. Crosby arrived in Chicago Wednesday evening, and stated that on Tuesday the motion of his company to have the suit against it held in abeyance pending the determination of the Snyder suit came up before Judge Hazel at Buffalo. The judge was informed as to the action of the Snyder company in settling. He asked why the Crosby company could not be substituted for the Snyder company in the Utica suit, in view of the relations. Mr. Redding, attorney for the American Bicycle Co., expressed opposition to this, but the judge, Mr. Crosby says, was plainly against him, and said that he thought Judge Coxe would permit it to be done. The judge closed the matter by ordering that the motion of the Crosby company stand over one month, to give that company an opportunity to present a motion to Judge Coxe to be substituted for the Snyder company in the Utica suit.

NEWARK, N. J., Oct. 21.—Record breaking by Albert Champion on a motor bicycle and by Joe Nelson in a 15-mile match with Joe Fulton behind pace furnished the sensational features of the racing at Vallsburg, where a not too cool October day permitted 4,000 people to enjoy the sport. Champion's new motor bicycle figures were created in a handicap race of 5 miles, in which he gave White and Newkirk 200 and Bennett and Dobbins 400 yards on their tandems. The first named pair were quickly caught; but the limit team put up a good enough run not to be overtaken for over a mile. Champion rode the first mile in 1:16 1-5 and the following four in 2:32, 3:50, 5:07 and 6:25, supplanting Holly's figures at Buffalo, Aug. 13, of 2:47, 4:11 3-5, 5:38 and 7:05 4-5 against time and the same rider's slower figures in competition on Aug. 16.

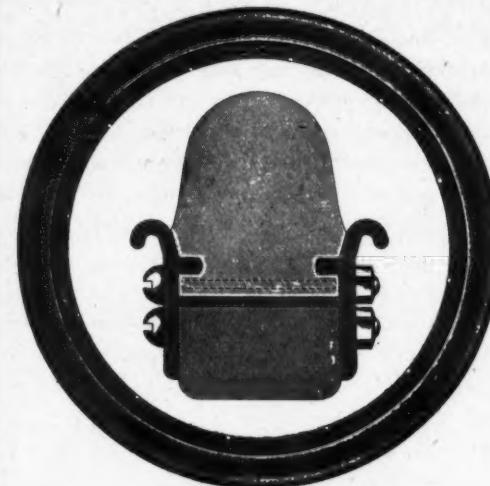
Nelson beat Fulton, the latter transferred

to the professional ranks after this race, by three and a half laps in the 15 miles, lapsing him in the fifth, ninth and thirteenth miles. Incidentally Chicago's Swedish midget, who will prove a worth successor to his late lamented brother Johnny, broke all amateur competition records in the course of his ride except the first, fourth and fifth, the last two still being held by that other Chicago boy, George Leander. Nelson's figures for 15 miles were 24:55 2-5, as against E. Ryan's 25:12 2-5, made at Berkeley oval Sept. 9, 1899.

That 20th Century List

New York, Oct. 19.—Publication of the \$4,000 price award paid by the Twentieth Century Mfg. Co. for the greatest number of 20th century headlights sold during 1901 created wide-spread comment and called attention to the enormous business this com-

DON'T BUTT YOUR LUCK



Up against the Butt-End Tire problem.
The

Wheeler Endless

Solid rubber clincher tires save labor,
trouble and obviate all the ills conse-
quent to the use of the old style kind.

Write for the rest
of the story.....

The India Rubber Company  Akron, Ohio

"Reading" Steam Carriage

1901 MODEL NOW READY

Strong—Speedy
Safe—Simple

SINGLE LEVER FOR STARTING OR REVERSING

Every Desirable Feature in a Steam Carriage Has Been Covered. :: ::

32 Gallons Water Capacity. 8 Gallons Gasoline Capacity. 30-Inch Wheels. Side or Center Steering. Long Wheel Base. 60 Feet Heating Surface in Boiler. Gasoline Controlled from Seat. Proper Lubrication. Auxiliary Throttle. Auxiliary Hand Pump.

Adequate Engine Water Pump. Automatic Fire Controller. Flexible Running Gear. Weight, Charged, 1150 lbs. Pilot Light. :: :: :: ::



PRICE \$800.00

STEAM VEHICLE CO. OF AMERICA

253 Broadway
NEW YORK

Agent for Great Britain: John L.
Bardy, Barron Chambers, New
Hill, London, E. C.

CYCLE SPORT AND TRADE

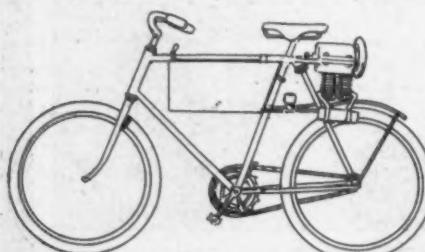
pany has built up by keeping all the promises it makes as faithfully as it has this liberal offer. Of course the actual number of lamps sold by the winners is confidential, but much can be guessed from the commercial importance of some of the prize winners and by hints given in their letters to Mr. Crary acknowledging the receipt of their prize checks. The writer saw some of these letters, which showed how keen was the interest in the contest in the trade.

A. M. Rothschild & Co. of Chicago wrote, lamenting the loss of 2,000 coupons in a fire. The Big 4 Cycle Co., of Kalamazoo, winner of the third prize of \$75 in class C, wrote that it had sold fully three times as many lamps as its coupons indicated. It saved no coupons early in the contest and only began accumulating them when it began to realize how large the demand was. In addition to this on many occasions the removal of the coupon was neglected when a sale was made.

Mr. Crary is busy on the annual catalogue which will be out in a few days; and Fred Castle is taking his annual "swing around the circle" with his usual unbroken record of jobbers closed.

Quite a New Design

The English people have criticised the motor bicycles so far submitted to their consideration on account of a similarity of design, but it is hardly probable that this objection will include a machine recently designed by M. E. Boiloo, of Besancon, as it is certainly enough of a departure from anything heretofore produced in this line



to avoid that charge, though it may not meet with entire approval in other directions. The most noticeable characteristic is the motor, which is a twin cylinder, with an exposed fly-wheel and is placed upside down, as it were, the crank-chamber being uppermost. It is also placed with the crank-shaft longitudinally of the machine.

The transmission is by a shaft, fitted with bevel gears, the shaft parallel with the rear stay on the left side of the machine, and the driving apparatus capable of being thrown in and out of gear. No particulars are given as to how efficient lubrication of the engine is maintained, nor does there appear to be any cover or gear cases for the bevel gears.

Promote Races at Saratoga

NEW YORK, Oct. 21.—"Pop" Elkes is laying pipes for the building of a six-lap coliseum at Saratoga next season, for which he has secured ample backing. He says during the horse-racing season in August the city is filled with sportsmen with no means of amusement in the evening outside of the gambling clubs and the road houses. This contingent is eager for amusement and a cycle racing craze can easily be created among them that will bear good fruit on their return to their various home cities.

Prospects at Atlanta

NEW YORK, Oct. 21.—Personal advices received by your correspondent from F. Ed Spooner, now in Atlanta, Ga., trying to interest capitalists in building a nine-lap indoor track in one of the big cotton exposition buildings, speak encouragingly of the prospects. Later messages speak of considerable success achieved since the writing of the letter referred to above. "Success seems almost in sight," writes Spooner, "but it has not come yet. We can have the building and I believe the car company will back me here very liberally and perhaps at Nashville and Birmingham in the spring. The interest is great and the papers are backing me up heavily from the start."

The plant of Arnold, Schwinn & Co., of Chicago, formerly the March-Davis plant, was seized last week by a representative of the county treasurer's office on account of non-payment of taxes, amounting to \$684. Unless the taxes are paid the property, or enough of it to satisfy the claim, will be sold this week.

One of the Chicago papers published a story on Monday about a Crowdus electric vehicle having made the trip to Joliet without recharging in an hour. Of course it was the exponent of yellow journalism.

ADVERTISEMENTS.

MAKE A MEMORANDUM OF THIS

to remind you when you need more light that if you will get the

BRILLIANT OR HALO

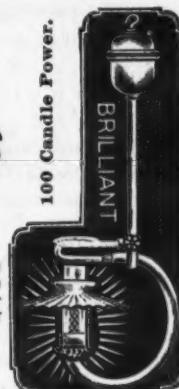
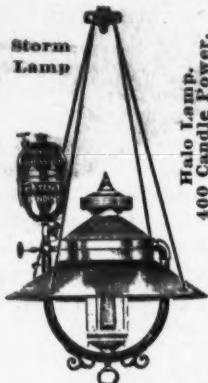
Gas Lamps

you can light up your store or place of business for

15 to 20 CENTS A MONTH

per lamp and each lamp will light a space of 20 to 40 feet square at less than $\frac{1}{2}$ the cost of kerosene or gas and you can if you like sell them at good profits as our prices are much lower in proportion than any other lamps. Refer you to anyone who has used them.

Brilliant Gas Lamp Company
42 State Street, - - - - - OHIOAGO, ILL.



THE OLDSMOBILE is a marvel to most people. It is only a simple fact, however. Runs 40 miles on one gallon gasoline. Starts at will from seat. Fully guaranteed.



Safe for child to operate.
We have separate catalogues of
Stationary and Portable Engines.

OLDS MOTOR WORKS

50 Concord Ave.,

DETROIT, MICH

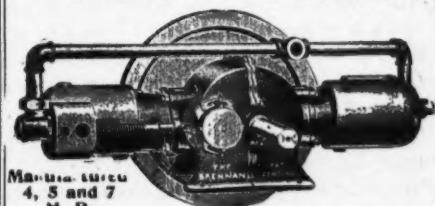
To give a good light you need a reflector or better still a lens mirror. The

Rushmore Automobile Searchlight

has a lens mirror. You don't have to clean it every time you light up. Turn this up side down and see how perfect it is.

THE ADAMS-MCMURTRY COMPANY,
114 Fifth Ave. and 7 East 28th St. - - - NEW YORK CITY

the BRENNAN WATER-COOLED MOTOR . . .



Manual Speed
4, 5 and 7
H. P.

On exhibit at Chas. E. Miller's space also Post & Lester's, Automobile Show, Nov. 2, New York
BRENNAN MFG. CO., SYRACUSE, N. Y.

THE BALDWIN

Has been adopted
by leading makers

$\frac{3}{4}$ Pitch.

$\frac{3}{4}$ -in Wide

Tensile
strength

4,000 lbs.



K. Franklin Peterson,
165 Lake St., Chicago, Ill.

BALDWIN CHAIN CO.,
Worcester, Mass.

Mail us your Subscription.



"THE DAYTON" BURNER

(Patent Applied For)

One-piece cast iron Burner. Can't warp or break; will not burn black or blow out. Pilot light burns constantly while carriage is in use. Generator and Pilot Light can be attached to other burners. Send for descriptive circular. See our goods at Chas. E. Miller's spaces 57, 58 and 59, at the Automobile show to be held at Madison Square Garden, New York, Nov. 2d to 9th, inclusive.

The Dayton Motor Vehicle Co.
1112 East Fifth Street,
DAYTON, OHIO

FROM CORRESPONDENTS

ST. PAUL, MINN., Oct. 18.—Editor Motor Age: I have run an 1,800-pound Waverly twelve months, making over 7,000 miles, in all kinds of weather, hardly missing a day, and have run a 1,000-pound Waverly runabout besides for the past two months, making over 1,200 miles. I used the vehicles 15 hours daily on and off, and have never had them in a house. I use rubber covers at night. As to troubles, they are considerable, but they are all curable, and don't for a moment equal horse troubles at any time.

The first great need at present, after a first-class rig, is accessibility to the makers thereof or an expert who knows something. The average repair shops lose too much time looking at the scenery and charge by the hour. There can be no doubt that the auto has come to stay. If you don't believe it, buy the best electric rig made and ride 1,100 miles, climb everything there is to climb and never miss a day, even with the weather 20 below zero.

As to troubles, the least is with the Waverly electric runabout, which, aside from the battery, is about as much bother as two bicycles. The battery proposition is bound to improve a few hundred per cent in the next few years, but it is all right now if you only know a few simple things and do them; or if you don't want to do them, simply run 'most any old way, but bear in mind that it will cost you \$10 per month extra all at once, in about six months, to replace positive plates.

Any 1,000-pound rig costs 10 cents per day for current at 5-cent kilo rate, and my 1,800-pound rig 15 cents per day for same. I average one puncture every 500 miles; repair cost on same, 50 cents, with G. & J. tires. It takes my boy two hours to wash one runabout, which I have done twice a week, and correct acid once every other week, which takes two hours. We oil slightly first day of every month, as every bearing is a ball bearing and requires little oil. Use very best lightweight oil, so it will not stiffen in cold weather. My rig will not shy at the cars, will stand all day in broiling sun or coldest weather without a

murmur, and never fails for one second to go when I say the word. It feeds itself while I sleep and eats enough at one meal to take me 60 miles without stopping. I believe at present the most suitable rigs are electric for city, steam for country and gasoline for those who are hard of hearing. —Yours, etc., J. GEO. SMITH.

Machines Wanted for Europe

New York, Oct. 18.—To the Editor: We are in the market for a gasoline automobile for the European trade, ranging in price from \$500 to \$600. We have very large connections on the other side and are certain that we could find a ready sale for the proper article. We shall be glad to hear of makers who would be likely to have an article of the kind required.—Yours, etc., Davis, Allen & Co., 44 Stone street.

Duryea Tells About Magnets

READING, PA., Oct. 19.—To the Editor: Your article on magnetos read with interest. It contains some statements which are misleading to the user, and unjust to the magnetos as an ignition device. For example, it is pointed out as a fault of the governor, that the motor is limited to the speed at which the governor works. If this is the case then the governor is badly designed, for we equip Duryea vehicles with magnetos only, unless otherwise ordered, and our magneto is driven fast enough to start the motor by pushing the starting crank past a compression, the hand making a movement of 5 to 10 inches and not even a half turn. This gives substantially battery results and yet we run this same motor at speeds as high as 1250, with which wide variation of speed the magneto makes a constant speed,—all accomplished by a simple form of governor used by us since 1896 and 1897. These governors require practically no adjustment except for wear and we get a fine spark from the magneto not possible from a battery except when quite new.

We do not favor automatic cut-offs, as the complication is more objectionable than the value of the added gain. A magneto

FROM CORRESPONDENTS.

should be able to take care of a machine at all times, even for starting, and the batteries should be carried, if at all, only as an emergency device or to make starting a little easier. We do not favor it as an emergency device, for the principle is bad. We would favor, instead, carrying two magneto's, which are more reliable than batteries, but even here the same objection arises. If any part of an automobile is so uncertain that a duplicate must be carried, that particular part should be improved. It will generally be found that a reasonable amount of care expended upon a good article will keep it in reasonable condition, while if duplicates are carried, double the care must be exercised and little, if any better results obtained. The man who carries a battery in addition to a dynamo must keep both in order although using only one, which materially adds to the bother of the vehicle.

Your comment on the writer's bicycle patent read with interest, but your criticism of the front brake seems incorrectly taken. In the first place, a few years ago front brakes were quite common on bicycles and it is only the advent of the coaster sprocket that brought many brakes to the rear wheel. With the motor bicycle the coaster sprocket supplies the rear brake and my controlling lever and front brake, so that friction is applied to both wheels. While it is true that a sudden application of the front brake might cause a very bad header, this is no arrangement of mine since the same fact holds true with any of the front brake bicycles heretofore constructed, and you must admit that brakes on both wheels are better than brakes on one only.

You will kindly note that the motor bicycle in question is extremely simple in construction, uses no batteries, has its parts balanced, its center of gravity low, its location the cleanest possible and far enough from the rider to neither soil nor burn the clothing.

Unfortunately so slow do we Americans progress that the motor bicycle has not yet found many buyers although it was destined to be a most popular road vehicle as well as the swiftest one.—Yours, etc., Charles E. Duryea.

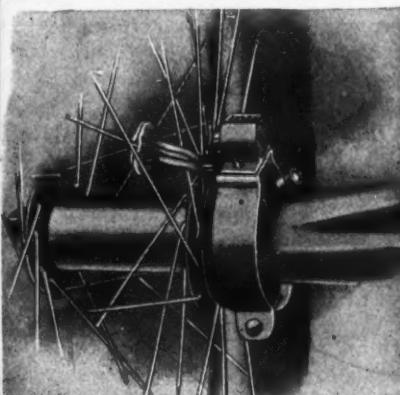
What Grade of Gasoline

SOUTH BEND, IND., Oct. 19.—To the Editor: I thought I would write you on a

When buying an Automobile see if it is equipped with a

VEEDER ODOMETER

If it is you may feel reasonably certain that its manufacturer pays careful attention to detail and it is a guarantee that he is not exaggerating the efficiency of his motor power or over-estimating his fuel capacity.



Odometer with band bracket Price **\$3 50**

The following leading automobile manufacturers have adopted the Veeder Odometer and offer it as a regular equipment without extra charge.

The Locomobile Co. of America, Bridgeport, Conn. The National Automobile & Electric Co., Indianapolis, Ind. The De Dion-Bouton Motorette Co., Brooklyn, N.Y. The St. Louis Motor Carriage Co., St. Louis, Mo. Milwaukee Automobile Co., Milwaukee, Wis. Electric Vehicle Co., Hartford, Conn. (Gasoline Carriages.) Rochester Cycle Mfg. Co., Rochester, N.Y. The Steamobile Co., Keene, N.H. Buffalo Electric Carriage Co., Buffalo, N.Y. Foster Automobile Co., Rochester, N.Y. The Kidder Motor Vehicle Co., New Haven, Conn. The Beardsley & Hubbs Mfg. Co., Mansfield, Ohio. The Aultman Co., Canton, Ohio. Baker Motor Vehicle Co., Cleveland, Ohio.

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Mfg. Co.**

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Odometers,
Cyclometers,
Counters,
Fine Castings.



Odometer, only price \$3.00

Made for 24, 26, 28, 30, 32, 34, 36, 38, 40, 41, 42, 44, 46, 48, and 50 in. wheels.
16-page catalogue free.

FROM CORRESPONDENTS.

point that I have never seen touched on by any correspondent, and that is the quality and kind of gasoline used for steam carriages. I purchased a light runabout Locomobile last spring and have kept an accurate account of the amount of gasoline used and the miles made by each gallon, and I have found such a discrepancy in the mileage made by different gasolines that I think attention ought to be given by some experts for scientific investigation.

The makers of my carriage desire what is known as 76° gasoline to be used, but as I could only procure that in barrels, and it required pumping off into my stationary tank, I bought the Standard Oil Co. product that they call deodorized stove gasoline, and as it seemed to work all right I continued the use of it. It cost about 4 cents less per gallon, and I could procure it easily. After my carriage got limbered up a little I found that I got from ten to twelve miles and more on consumption of one gallon of this gasoline. On one occasion I made the run from Rolling Prairie to this place, a distance of 21 miles, with two in the carriage, in 1 h. 20 m., which included stopping for errands several times, on a consumption of 1½ gallons of gasoline and one and one-half gallons of gasoline and about 13 or 14 gallons of water. This would give 14 miles per gallon, but it was a good day, with no wind to run against, though the roads were not extra good, and there are many hills, sand and ruts; yet it seemed to steam unusually well.

Now for the other part. I had my carriage at a friend's, who uses nothing in his carriage but 76°, and he wanted me to try it, as he was sure I would find it far more satisfactory. I did so a few times and at first thought there must be some mistake in measuring, but I tried it very carefully and found that I could only get a trifle over .6 miles out of one gallon of the 76°. One run of 18 miles used three gallons and one run of 19 miles the same, and on one quieter day I got 20 miles out of three gallons, but all these runs were right in the city, with good paved streets, while the other runs were over all kinds of country roads, with the D. S. gasoline, and never averaged below 10 miles per gallon. Furthermore, I could not keep my steam up as well, and so could not run as fast with the 76° as with the

D. S. With the D. S. I never open my main burner more than a half turn, which gives me all the fire I need, while the 76° required a whole turn or more and also required a higher air pressure. The other seemed to work just as well when pressure had run down to 15 or 20 pounds.

I was told that this D. S. gasoline would soon choke up the gauge on feed pipe, but I have run my machine about 2,100 miles and have not been obliged to have it cleaned, while I know of several steam carriages not used as much as mine which used the 76° and have been obliged to have gauge cleaned a couple of times.

I would like some expert to explain wherein the superiority of the 76° over the D. S. gasoline lies. As a matter of expense the cost of running was more than double with the 76°, while it also reduced my mileage capacity of a tank nearly one-half. I think the principal trouble with those who have tried D. S. gasoline and said it did not work has been that they may have got dirt in it in some way. I run all my gasoline through a very fine gauze in my funnel. Then, too, it does not need to be turned on so much, as I think it will smoke a little easier than the 76°, but it will give more heat and burn just as well, if not turned on so full, and with no more odor or smoke than the 76°.

Judging the difference between the two kinds scientifically, I would say that the D. S. gasoline, which really from 70° to 74°, has more heat units per gallon than the 76°, while perhaps the latter would have more explosive quality that would render it the best for gasoline motors. I hope some expert may be able to explain fully this difference in the capacity of these two gasolines.

In regard to my carriage, I wonder if any of your readers can show a better pump record than mine. I have run 2,100 miles and have only tightened the packing nut on it twice, so still have margin to run it longer, and my water supply has always been ample. My carriage has Hartford tires, and although I have been over many bad roads, and latterly have had a seat put on "dos-a-dos" and carried four people a great deal, yet have been fortunate enough never to have had a puncture, and what is more remarkable I ran three months, or about 1,200 miles, before I blew them up

FROM CORRESPONDENTS.

from what they were when received, and perhaps should not have pumped them any more then, only I have to deflate them to replace broken spokes. The season being about over, let us hear if any others can show a better record on these points. Yours, etc.,

WILL U. MARTIN.

Wants Working Drawings

San Francisco, Oct. 12.—To the Editor: I should like to get working drawings of a double-cylinder vertical automobile gas engine of about 8-horse-power. Will you kindly inform me of a firm which has such for sale and oblige.—Yours, etc., A. F. Koelzer.

[We know of no one who would be willing to supply the drawings. The Gormully & Jeffery department of the American Bicycle Co. makes a double cylinder vertical motor of about the required size, but it is unlikely that it would be willing to supply drawings.—Ed.]

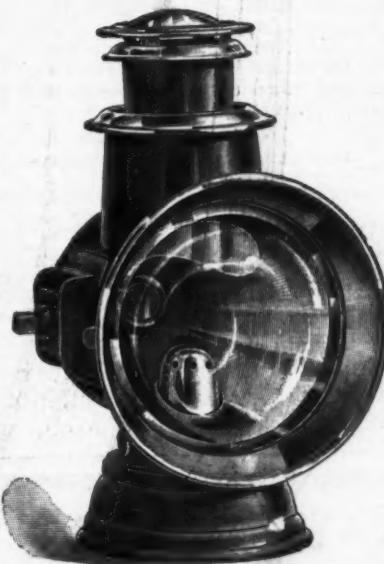
Whites Made Every Control

CLEVELAND, O., Oct. 22.—To the Editor: We note in your issue of the 17th you mention on page 1 under the official report of the endurance contest, as follows: "One of the White machines missed the control at Syracuse," etc., and beg to state that in this you are mistaken. We think if you will examine the official report carefully, particularly under the mileage between stops, you will see that the time for A-11 in the column is marked with an X, which means that the average for this control was less than 8 miles an hour, and that where a carriage misses a control it is indicated by a zero. A-11 did not miss this control, as you will readily see. It was, however, delayed on the road on account of the light rims with which it was equipped; the spoke nipples starting to pull through same. A road repair, however, was made and the machine arrived in the Syracuse control at 8:45, about half an hour before the control was closed.—Yours, etc., White Sewing Machine Co., W. G. White.

A seeker after notoriety has made an automobile with grooved wheels and a track which it lays for itself as it moves along. It is commended to the attention of Alexander Winton for use in his next ride across the continent.

A Shining Light in Automobile Society.

THE Dietz Lamp



IT sometimes happens that the man in the motor vehicle has lamp troubles of his own. We say "sometimes," because in most cases automobiles are equipped with the DIETZ lamp—the satisfactory kind

As the result of practical tests, most of the experienced manufacturers are using or will adopt the

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exclusively. If you want to know more about the lamp made by this reliable company, who have been making lamps for more than half a century, write to

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Catalogue Department

THE MOTOR AGE has established a catalogue department and will forward the catalogues of any or all advertisers on request.

The objects of this department are as follows:

- To save the reader the trouble and expense of writing to each individual concern whose catalogue he may need.

- To place advertisers in direct communication with prospective purchasers.

Applicants for catalogues will please state specifically the names of the concerns whose catalogues they desire and enclose stamps to cover postage.

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Dyke's Float Feed Carburetor

No. 2 and No. 3 suitable for engines from 1 to 12 and 12 to 40 h. p. We now make them of BRASS OR ALUMINOID.

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AUTOMOBILES

WHAT ARE THEY AND
WHAT WILL THEY DO?

In completely answered without the use of technical language, and a valuable directory of makers of motor vehicles and their parts is given on a special number.

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W. S. Rogers (Late Mngr. Ball Bearing Co., of Boston) KEENE, N. H. Vice Pres.

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"Low Water Alarm for Steam Carriages"

Low Water in the boiler of a Steam Vehicle is particularly dangerous and expensive.



The Reliance alarm is light strong, and easily attached. It gives the alarm before the water gets too low. Made on the same principle as the celebrated Reliance safety Water Columns, for stationary boilers, that have been on the market for 14 years, and of which there are over 35,000 in daily use. When you buy a new steam vehicle, insist that the boiler shall be protected by a Reliance Low Water Alarm.

**SAFE! SURE!
SUCCESSFUL!**

Bank of America, Sumner, Iowa, Feb. 25, 1901.
THE RELIANCE GAUGE COLUMN CO., Cleveland, O.

GENTLEMEN.—In reply to your fav'r of the 22d inst., asking how I liked my Low Water Alarm sent me a few days ago, I beg to advise that the same is working entirely satisfactory. I have attached it to my "Locomobile" under the seat, and between the engine's muffler and the boiler. I find the space just large enough and the main braces of the carriage are just right to support the Column nicely. I have tested it in various ways and find that it will always give the alarm just as the water leaves the bottom gauge cone in my water column. Consider the alarm very substantially made, and it would seem there is n't thing to get out of order or cause trouble. There is no doubt in my mind that it will save my boiler a scorching sometime in the future. Yours very truly,

Signed, J. F. GABE, Vice Pres.

RELIANCE GAUGE COLUMN CO., Sole Mnfrs.
Write for prices. 65 E. Prospect St., Cleveland, Ohio.
CHICAGO OFFICE, 79 LAKE STREET.

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The winter season is approaching. We can help you to make it profitable. We have a good proposition to make. The article we have is a good one.

The "Nulite" Vapor Gas Lamp



is no experiment. Beats any light on earth except the sun, and is almost as cheap. All styles for Home, Store or Street. An unlimited field. Write for catalogue and particulars.

CHICAGO SOLAR LIGHT
CO., Dept. 21, Chicago, Ill.

Dietz Automobile Lamp

Burns kerosene 24 hours with one filling. A simple, efficient Lamp giving a fine light and which can be depended on to stay alight in spite of wind and jar. Especially suited for touring.

R. E. DIETZ COMPANY. • 37 Laight St., New York

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For Bicycles, Launches, Etc. Our 3½ H. P. light Motors for Runabouts. Our Transmission Gear. All parts to build Automobiles, either finished or Castings. Carburetors and Mufflers.

MORGAN MOTOR CO.

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Seven models, with a range of prices to suit all purses. Write us.

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We can quote a very interesting price on automobile fenders. Write us for

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For expanding $\frac{1}{2}$ -in. Copper Boiler Flues in Automobile boilers. \$4.00 Each.

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Reads Street. City . .

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Bicycles and Automobiles. Special stampings made from drawings or blue prints, all of a superior quality. Send for Catalogue.

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There is no SUCCESS like
KEATING MOTOR BICYCLE SUCCESS

KEATING WHEEL & AUTOMOBILE CO.
MIDDLETOWN, CONN.

THE WORD **Locomobile**

Refers to Steam carriages made by
the LOCOMOBILE COMPANY OF AMERICA
only. It is a trade mark. :: :

7 East 42nd Street, :: :: :: NEW YORK

DIXON'S GRAPHITES

No matter what type of Automobile you have, you will be benefited in many ways by using Dixon's Graphite Preparations. It will pay you to send for pamphlet.

DIXON CRUCIBLE COMPANY, Jersey City, N. J.

Manhattan Company's Troubles

Last week judgment for \$32,715 was entered against the Manhattan Automobile Co., 502 West Thirty-eighth street, New York, in favor of J. Overton Paine, stockholder, for money advanced to the company between Feb. 12 and Aug. 21. Paine was one of the incorporators, which was organized under New Jersey laws on Oct. 26, 1900. Deputy Sheriff Murray has been in charge of the factory of the company for several weeks past on executions and attachments. The value of the property there is estimated at about \$6,000. James A. Hands is the president. Later there was a sale of machines, under a chattel mortgage, realizing \$5,500, of which \$2,000 remains to satisfy other claims, the mortgage being for \$3,500.

Presentation of Prizes

NEW YORK, Oct. 21.—The cups won in the hill climbing contest on the Buffalo run will be presented at the A. C. A. to-morrow evening, when the series of weekly Tuesday evening club nights will be inaugurated. Incidentally a special feature of the evening will be exchange and relation of experiences by the members who took part in the run. Every other Tuesday evening there will be various special features and every club night a supper will be served. The members are also urged to rendezvous at the club every Sunday afternoon from four to six o'clock.

F. E. Spooner has arrived at Atlanta, Ga., and expects to start winter cycle racing there with a 25-mile paced race between Walthour and Elkes on Thanksgiving night.

The George N. Pierce Co., of Buffalo, has been awarded a gold medal for its cycle display at the Pan-American.

MISCELLANEOUS

Advertisements under this head 5 cents per word first insertion; 3 cents per word each insertion thereafter. Cash with order. Express orders, postoffice orders or stamps received.

Construction of a Motor Quadracycle, 10c

By L. Elliott Brookes. With all necessary illustrations.

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FOR SALE

FOR SALE—Second-Hand Steam, Gasoline, Electric vehicles. Guaranteed. A. L. DYKE, Linmar bldg., St. Louis, Mo.

FOR SALE—In good condition, two second-hand Bicycle Trunks, double and single style. HOUSE & HERRMANN, Wheeling, W. Va.

FOR SALE—The Automobile Storage and Repair Co., 57 West 68th St., New York, have new and second-hand steam, gasoline, and electric carriages constantly on hand and have always some special bargains.

BICYCLE MOTORS—We have on hand five first-class 1½ horsepower bicycle motors. Aluminum crank case, phosphor bronze bearings and highest quality of workmanship. Will be sold at a sacrifice, either singly or as a lot. C. M., care MOTOR AGE.

FOR SALE—Horses and Vehicles: One Waverly Electric Automobile, second-hand but as good as new, for two or four passengers; cost \$1300; will sell for \$650. Address, F. I. WILLIS, 34 Monument Place, Indianapolis, Ind.

What is doing in AUTOMOBILISM?

All who are interested in that question should consult the

"Motor-Car World"

which each month reviews the progress of the new Locomotion throughout the World. Published at 186 Fleet Street, London, England. Annual Subscription, post free to the United States, one dollar.

"RIGS THAT RUN"

Are noticed by the public everywhere a practical vehicle is recognized and appreciated.

"Will you please send me catalogue and price-list of your latest type of carriages suitable for two and four people. There are three or four steam carriage owners here who contemplate purchasing gasoline machines shortly and who are posting themselves on the various makes. One of your vehicles owned by T. C. Meadows of this city (the treasurer of our automobile club) has given excellent service, perhaps better than any in the club."

Very truly yours,
(Signed).....

The above is an exact copy of a recent letter. We have many others, and a testimonial from EVERY PURCHASER. You will be willing to give one, too, if you get a St. Louis Carriage.

Write for Catalog. It costs nothing.

ST. LOUIS MOTOR CARRIAGE CO.
ST. LOUIS, MO.

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Chicago — St. Paul
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Equipment and Service Unequaled.

Time tables, maps and information
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Buffalo Rate Again Reduced

ROUND TRIP FROM CHICAGO

\$6.00

The Wabash sells excursion tickets, Chicago to Buffalo and return as above, every Tuesday, Thursday and Saturday, until the Exposition closes, good to return five days from date of sale. Good only in coaches or free reclining chair cars. Four daily trains. Write for Pan-American folder. City ticket office, 97 Adams Street, Chicago.

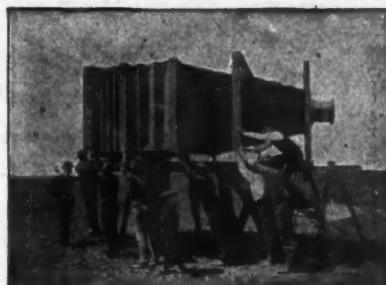
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461 Broadway, New York; 601 Chestnut Street, Philadelphia; 368 Washington Street, Boston; 301 Main Street, Buffalo; 212 Clark Street, Chicago; 435 Vine Street, Cincinnati; 507 Smithfield St., Pittsburg; 234 Superior Street, Cleveland; 17 Campus-Martius, Detroit; 2 King Street, East Toronto, Ont.

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MANUFACTURERS OF
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SPARKING PLUGS
EVERYTHING
FOR AN
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If you are not using the A R B you are not getting the greatest possible efficiency from your machine.
Send for circular.

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DE DION-BOUTON
"Motorette"
COMPANY.

Sole American Agents and Licensed Manufacturers for
DE DION-BOUTON & CO., PUTEAUX, FRANCE

DE DION "MOTORETTES"



ARE THE STANDARD OF THE WORLD

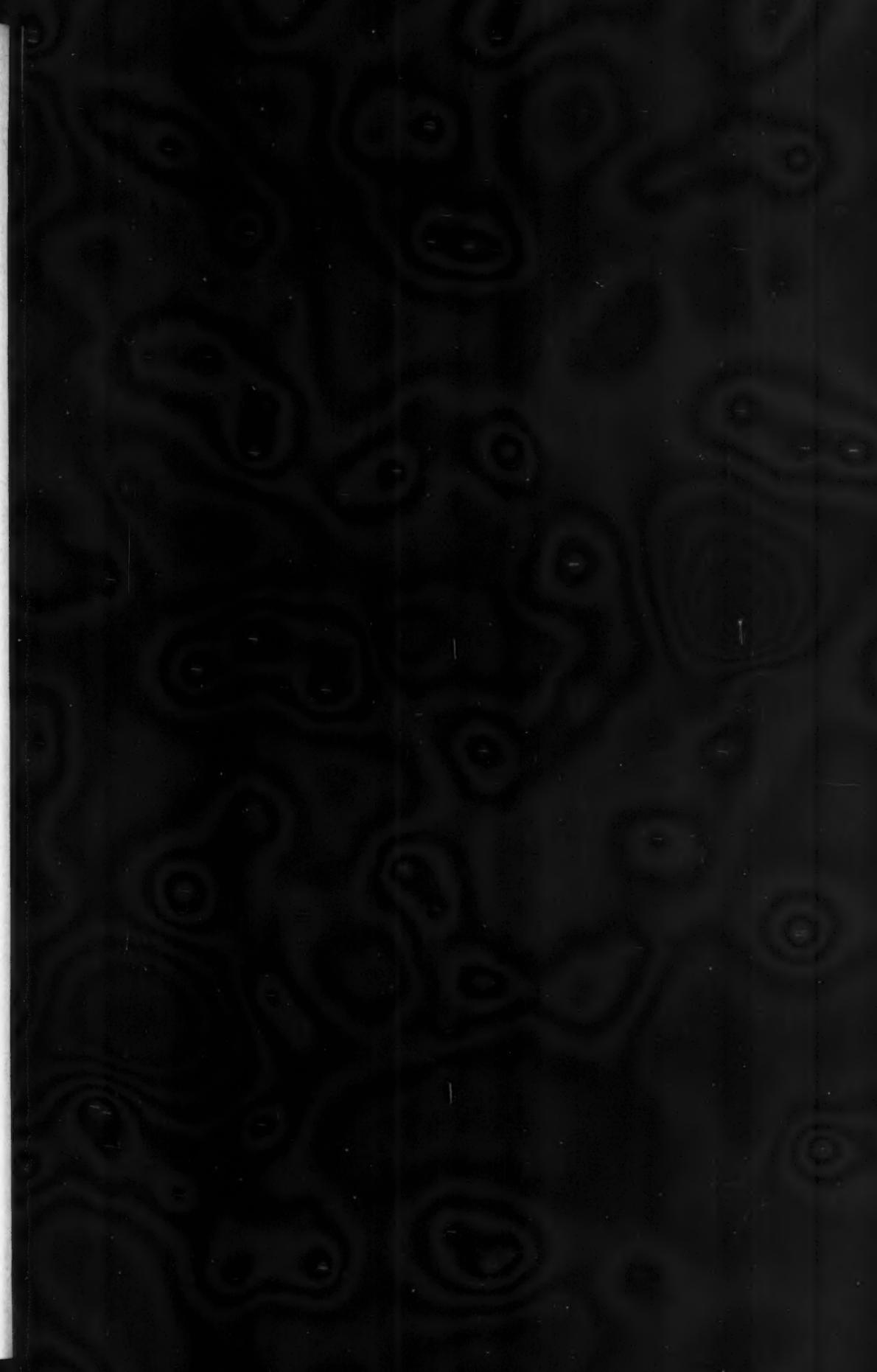
Thousands of Satisfied
Owners say so . . .

Write for additional proof.

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Church Lane & 39th St.
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Are the most valuable endorsement. Motor Age has them because:

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Its columns are open to the discussion of all subjects of interest.

It covers all important developments of sport and trade impartially and in language which is easily understood.

It conducts a bureau which supplies the catalogues of all advertisers to subscribers on request.

It makes known the wants of subscribers to advertisers by means of a weekly bulletin. It is read, from cover to cover, by those who desire to use automobiles intelligently and need information on which they may rely.

Its subscribers are men of ideas, who do not fear to offer them for the benefit of others.

These things mean that Motor Age subscribers are satisfied and that it is a desirable advertising medium.

The annual subscription is \$2.00. We are ready to make a liberal proposition to agents.

THE MOTOR AGE

MONON BUILDING,

CHICAGO

Columbia and Riker Automobiles

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ONLY GOLD MEDAL AWARDS

For Electric Automobiles at the
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Mark XIX, Columbia Cabriolet.

These vehicles merited the highest awards—one gold medal on superiority and another on variety and completeness of exhibit. No other make of electric vehicles received a single gold medal. Write for 1901 Illustrated Catalog describing every type of vehicle from a Runabout to a Four-Ton Truck.

Electric Vehicle Company ¹⁰⁰ **BROADWAY** **New York**

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